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The West Virginia MEDICAL JOURNAL

Published by The West Virginia State Medical Association

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—Daniel Webster

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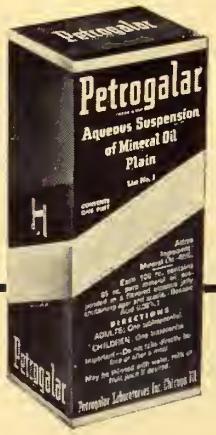

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THE WEST VIRGINIA MEDICAL JOURNAL

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Vol. XXXIX January, 1943 No. 1

THE INTELLIGENT CARE OF INDUSTRIAL INJURIES

By D. L. HOSMER, M. D., F. A. C. S.
Bluefield, West Virginia

In these times when manpower is in such great demand the importance of measures which tend to prevent or minimize loss of working time from injuries is especially stressed. The prevention of injuries in industry is of course the ideal; however, they continue to occur and with their occurrence the responsibility of the industrial physician or surgeon enters to minimize as much as possible loss of time. Such minimizing of lost time is beneficial to the injured and to his employer alike.

The minimizing of lost time and permanent disability or the ideal of obtaining the best economic, functional and anatomic end result in the shortest possible time is achieved only through intelligent care of the injured. Such care is dependent on several factors. Although the treatment of the injured person is a continuous procedure from occurrence to recovery an attempt has been made to divide this procedure into five factors or phases. These are as follows:

1. First aid.
2. Segregation of cases.
3. Necessary modern physical equipment.
4. Psychotherapy.
5. Cooperation between employer and physician.

THE AUTHOR

Graduate University of Michigan; interned Maryland General Hospital, Baltimore; Postgraduate, Massachusetts General Hospital, Children's Hospital, Boston; Fellow American College of Surgeons; President elect, Hospital Association of W. Va.

There are, of course, other factors concerning injuries, such as compensation, rehabilitation, et cetera, which will not be dealt with in this paper. The five factors noted will be discussed, some generally and some in detail.

FIRST AID

I do not see injuries at site of occurrence but at the hospital where they are admitted for permanent treatment, and it is at this point that the effects of good, bad or indifferent first aid treatment can be seen. It is the result of this experience with a large number of seriously injured individuals that

prompts me to discuss adequate first aid. I shall discuss first aid measures in some detail because it has been my observation that such treatment of injuries in this section is very inadequate. This statement is not made as criticism but with the hope that more interest will be aroused in this most important means of saving life and lessening disability.

Reasons for inadequate first aid and, in some cases none, vary. The most common reason appears to be the idea that the injured should be gotten to the hospital as quickly as possible. A certain amount of speed is, of course, advisable but not to the extent that it adds injury to injury. Another reason is lack of proper materials, such as splints, dressings, et cetera. Still another which I feel plays a small part, is the lack of knowledge of, or interest in, first aid on the part of the physician who sees the injured at or near the site of accident. None of these reasons, if such they be, is tenable.

"FIRST AID"

The term "first aid" has been familiar to the public for years and since the beginning of the present war the various civilian defense organizations have familiarized large numbers of individuals with its practice. My impression is that many physicians look askance at the first aid endeavors of laymen. This is, for the most part, wholly unjustified and I believe that many physicians would be greatly benefited by much of the material presented in the American Red Cross First Aid Text Book.

We are all familiar with the stress laid on the proper handling of injuries, particularly in these times. The work of the first aid teams in England has been most remarkable and it is impossible to estimate the amount of suffering allayed and the lives saved by their work. If such splendid organization and methods can be developed so quickly under such adverse conditions, one would expect that first aid measures in industry in this country would be as good or better, in view of the fact that in industry here there is a permanency of location and organization, there is no stress corresponding to bombing and there is, in most instances, a physician who can give the injured person attention in a very short time following injury.

I have been using the term "first aid" rather glibly, as is so frequently done. At this point, therefore, it might be well to state briefly what this term implies. Its prime purpose, of course, is to save life and secondarily to decrease morbidity and alleviate pain. More specifically it means the proper handling, positioning, splinting and bandaging, and the giving of pain-relieving drugs and other supportive or restorative measures as indicated specifically. Different types of industry have different kinds of injuries and require different first aid measures. The common industry in this section is coal mining and it is with injuries occurring in this industry that I shall deal mainly; however, the procedures described are applicable in general to injuries occurring anywhere.

Coal mining is hazardous work. During the year ending June 30, 1941, there were 41,551 injuries reported to the Compensation Department. Sixteen thousand, six hundred and seventeen of these occurred in coal mining and of the 357 fatal injuries there were 272 in the coal industry. These figures serve only to emphasize again the hazardousness of coal mining.

INJURIES SUSTAINED IN MINES

Before considering specific measures of first aid it would be well to consider the causes and types of injuries sustained in mines. By far the most common cause of injury is that resulting from a fall of slate or coal. This produces crushing types of injuries and frequently results in multiple injuries. Machinery for transportation and cutting of coal accounts for many serious injuries. Injuries due to electricity, explosions and burns occur but are less frequent, at least in this immediate vicinity.

Injuries due to falling slate and coal vary widely as to severity and extent, depending on the amount of material and the distance which it falls. Multiple fractures and wounds

may be produced by a large slate fall which, in general, produces greater injury in proportion then does that of coal. Such a fall usually results in crushing injuries to trunk and head and often associated fractures of the extremities. Compression fractures of vertebræ may result from large falls if the man is jackknifed and they may result from much smaller falls on a man in a stooped position.

Injuries occurring in transportation are, in the main, to the extremities, particularly the lower extremities. However, injuries to the chest and pelvis result from the victim being rolled between motors or cars and the top or sides of the mine.

Coal mine accidents often occur several miles inside the mines and it is frequently difficult to extricate the victim. Mine operators and miners have been interested in first aid for a number of years. Much teaching, practice, and many exhibits of efficiency have been carried out but in spite of this any first aid of consequence is rarely carried out in mines. Reasons for this are the lack of judgment on the part of fellow workers and the lack of equipment in some cases, but in the main, it is the emotional unfitness of the majority of laymen for this type of work.

Just how much first aid should be attempted within the mines is questionable. The site of accident is, of course, the ideal place for first aid but I feel that only simple preliminary measures should be carried out in the mines. Such measures may include a pressure dressing to any bleeding wound, the splinting of extremities and the preparation for transportation.

Fortunately, in one respect, most of the wounds sustained are crushing in nature and bleeding in such wounds is not great. If bleeding should be active, sterile gauze for a pressure dressing should be available. A tourniquet should not be used.

Splinting is principally concerned with fractures to the long bones of the extremities. Splinting in cases of injury to the spine is more a question of positioning. The ideal splint for extremities is the Thomas splint for the lower and the Murry-Jones for the upper. These can be applied quickly over clothing and if the simple principles of traction and counter-traction are taught, the use of these splints is desirable. There is, however, another type of splint which not only serves as a stretcher but can be used to splint any one of the extremities. This is the perforated type of stretcher board. This serves ideally as a flat, firm stretcher. The perforations serve for the passage of triangular bandages to immobilize the entire trunk or any of the extremities by encircling these parts. By using an oblique bandage in the crotch or arm pit and at foot or hand a sufficient amount of traction can be applied to the extremity before an encircling fixation bandage is applied. With the injured fixed snugly to this board, transportation is greatly facilitated.

MOVING THE INJURED

First aid workers in the mine should be strongly impressed with the importance of moving the injured person and especially the injured extremity as little as possible. In cases of back injury the victim should be so moved that the back is kept straight and no motion in the back produced. I do not believe that one should expect a lay first aid worker to diagnose a compression fracture; however, in view of the frequency of its occurrence in coal mining, all seriously injured persons, especially those who have been covered up or jackknifed, whether or not they complain of pain in the back, should be handled and transported with the back straight.

The stretcher board described serves admirably in case of injury to the pelvis, in which case the trunk and lower extremities can be fixed firmly and motion of pelvic fractures prevented in transport.

The only type of case which should not be transported in the recumbent position is that of head injury in which the victim is deeply unconscious. In such a case the injured should be turned on his side so that a better airway can be maintained and mucus and saliva can drain from the mouth.

Following the first aid procedures noted above the injured should be well covered with several blankets and transported to the outside with reasonable haste.

FIRST AID BY LOCAL PHYSICIAN

A discussion of first aid measures to be carried out by the local physician may appear somewhat technical to the layman interested in this subject. However, this phase of treatment is most important and it is felt that a discussion of it cannot be omitted or curtailed.

Some small building or room which is well heated should be conveniently located for the carrying out of first aid measures by the local physician. This should be equipped with proper splints, dressings, et cetera.

In all of the severer types of injuries the first procedure is to give the patient morphine. Morphine, however, should not be given in case of head injury except in small doses to quiet marked restlessness. This drug should be given by hypodermic and not by mouth, as is frequently done. Morphine by mouth is slow and uncertain in its action.

In most cases all clothing should be cut off. This can be done quickly without injury and is important to determine fully the extent of injury. On removal of clothing one frequently finds a bleeding wound, possibly not complained of, which is gradually producing shock or adding to it.

All bleeding wounds should have pressure dressings applied and the part elevated if possible. In rare cases a tourniquet to the thigh or arm may be necessary but if such is needed a note should be made of the exact time of application. Only gross cleaning of a wound should be attempted at this point. No antiseptic should be used. In view of recent experience with war wounds, sprinkling the wounds with sulfanilamide powder before applying a dressing may discourage the development of infection.

If fractures of the extremities have not been adequately splinted a Thomas splint should be applied in a case of fracture of the lower extremity and a Murry-Jones splint for fracture of the arm, or board splints for fracture of the forearm. Board splints for the lower extremity are adequate if properly applied but their disadvantage is that various lengths are required and more time and handling of the injured is necessary.

As soon as essential dressing and splinting have been carried out the patient should be well covered and an evaluation of his general condition made. To paraphrase the adage of the trees and the woods, the physician should not fail to see the patient because of his wounds. An evaluation of the patient's general condition consists of determining whether or not he is in shock. No attempt will be made here to discuss or differentiate between primary and secondary shock nor to present the theories of its production. It should be mentioned, however, that a great deal of investigation has been carried out in the past few years, the results of which have led to a much better understanding of the true nature of shock and more logical methods of treatment. Some index of shock can be ascertained by the appearance of the patient and the quality and rate of his pulse. A better index, however, is the determination of blood pressure, which can be carried out in a very few minutes. If shock is present, what should be done about it at this point?

TREATMENT OF SHOCK

The proper splinting of fractures and the stopping of hemorrhage, of course, play an important part in the prevention of the development of shock or help to prevent its progression when present. There are three things necessary in the treatment of shock. These are morphine for relief of pain, the conservation of body heat and an attempt to restore circulating fluid. The first two of these measures have been discussed. No stimulating drugs have been found of value in the treatment of shock. Adrenalin is frequently given for its effect on blood pressure but as a result of recent work it has been shown that this drug is of no value and, in fact, its action actually increases shock. Cardiac stimulants are of no value. The heart will do its job if given the fluid to pump.

To restore circulating fluid the simplest, which is easily obtainable and administered, is glucose solution. This is given intravenously. In cases of moderate to severe shock its effect in restoring circulating fluid is only transient but it may serve to bolster the circulation sufficiently to permit transportation to hospital. The ideal fluid for intravenous administration in combating shock is blood plasma. There is on the market at the present time dried plasma, which can be prepared for administration within a few minutes and which requires no complicated apparatus for administration. It is felt that a supply of dried plasma should be avaliable to the local physician for cases of moderate or severe shock and for those cases which do not respond to intravenous glucose solution.

MINOR INJURIES

The measures outlined to this point have to do with major injuries. Certain points should be made in regard to minor injuries, particularly wounds of the hands. If not properly cared for such wounds may, as a result of infection, become very disabling. Most minor wounds are contused lacerations and require thorough debridement before closure. The only treatment previous to this should be a dusting with sulfanilamide powder and sterile dressing. No antiseptic should be applied.

Burns should be covered with dry sterile dressings only. No greasy ointments should be used. If greasy ointments are used removal is necessary on arrival at hospital in order to treat the burns by accepted methods and this removal adds greatly to the pain and to the difficulty in beginning treatment.

It would be advisable for the local physician to send to the hospital with all seriously injured patients a note or preferably a card form containing the following information: the amount of morphine and the time it was given; the extent of shock and the treatment given; if a tourniquet has been applied, a note should be made as to the exact time of its application. Also such a form should list evident or possible injuries.

SEGREGATION OF CASES

The next phase of treatment is that which is carried out in the hospital. Segregation of cases here is most important in the intelligent care of the injured. One or more members of the hospital staff should be designated to care for these cases. This is especially true of fractures, the treatment of which has become almost a specialty in itself. Segregation is not carried out strictly as certain injuries are best cared for by specialists, such as head injuries by the neurosurgeon, urinary tract injuries by the urologist, et cetera. To those entrusted with care of injuries falls the responsibility of obtaining and maintaining accurate records. Aside from the medical value of complete records every injury should be regarded as a potential medicolegal case and detailed notes regarding the history of injury, extent of injury, progress and final disposition are indispensable. Complete and detailed notes as indicated, greatly facilitate the proper execution of various compensation and insurance forms so prevalent in these times. They are also most important for intelligent testimony before the Industrial Commission and in court.

On admission to hospital of a patient with a major injury, a quick determination of all injuries is made. No active treatment or x-ray examinations should be carried out until the general condition of the patient is evaluated. The presence of shock is easily determined by estimation of the blood pressure. However, a severely injured person may have potential shock with but little change in blood pressure. Several hours before shock develops there are certain changes which take place in the ratio between the number of red cells and plasma and this change in ratio can be demonstrated by several means and within a few minutes. The simplest of these means of determining the extent of shock and of potential shock is an estimation of hemoglobin. In traumatic shock not complicated by hemorrhage there is an increase in the hemoglobin estimation. Hemoconcentration may also be determined by the hematocrit, in

which case a given amount of blood is centrifuged and the relation between the amount of cells and plasma is noted. Normally the relationship between cells and plasma is fairly constant, there being 45 per cent red cells and 55 per cent plasma. In shock the percentage of cells increases and in cases of severe shock, as seen in burns, it may reach 65 to 70 per cent. Another procedure which can be carried out in a very few minutes and which yields valuable information is the determination of the specific gravity of the blood and plasma. As shock develops the specific gravity of the blood increases. This increase is determined by a falling-drop apparatus. From the specific gravity of plasma determined in a similar manner, one can estimate the plasma proteins, which in shock are reduced.

SHOCK RESULTING FROM HEMORRHAGE

The shock which results from hemorrhage produces the same appearance of the individual as does traumatic shock, except that the blood findings are altered by the loss of this fluid.

The principle of treatment of shock, as noted previously, is the restoration of that which has been lost. In hemorrhage this is all of the elements of the blood. The treatment then is blood transfusion. In shock without hemorrhage there has been no loss of red cells but there has been a loss of plasma and so it follows that the ideal treatment for this is plasma.

Estimation of hemoglobin, the hematocrit, and blood plasma specific gravity not only serve to indicate the presence of shock but also serve as a guide to the amount of blood or plasma necessary to overcome this condition. Certain formulæ and rules have been worked out to calculate the amount of blood and plasma needed in a given case of shock or hemorrhage. The amount is determined from the variation of blood changes just noted, the aim being to restore blood findings to normal amounts or proportions.

A blood bank maintained by the hospital greatly facilitates the obtaining of blood or plasma for administration in shock. At this point I might say that we are very fortunate in this section in that people donate blood freely and at times eagerly, for their relatives, friends and frequently for strangers. This willingness, particularly in the coal camps, has resulted in an indexed file of about two thousand possible donors whose blood has been typed. With the blood bank a sufficient quantity of any type of blood is immediately available for administration. The details of operation of a blood bank will not be discussed. Briefly this consists of obtaining blood, blood-typing and testing for syphilis. The blood is then stored in a refrigerator until needed. If not used within two weeks the plasma is separated and stored for future use in those cases which do not require blood cells. In cases of emergency, blood used from the bank is replaced by a donor furnished by the recipient.

X-RAY OF INJURIES

If or when the injured person's general condition permits, detailed determination of his injury is carried out. The most important single means of examination of injury is the x-ray. An x-ray film not only shows the presence of bone and joint injury but in a large measure determines the type of treatment necessary. Needless to say, x-ray of injuries should be made by one who is well trained in the standard procedures. Close cooperation between the x-ray department and the traumatic surgeon is very necessary. In addition to a suitable stationary x-ray machine, a portable machine is indispensable for the making of x-ray examinations at the bedside and in the operating room.

A discussion of the details of treatment of various specific injuries will not be undertaken. Those who undertake treatment of trauma should be familiar with the continuous advances made in this field. A few of the procedures with which a traumatic surgeon should be familiar will be enumerated without comment. These are:

Recognition and treatment of shock. The debridement of wounds and their suturing

where indicated. Repair of severed tendons and nerves. The use of the various forms of traction and counter-traction, especially skeletal. The closed plaster technique for wounds and compound fractures. The use of unpadded plaster casts. Standard sites for, and technique of, amputations. The surgical and chemotherapeutic treatment of infections and in particular, infections of the hand. Operative treatment of fractures for internal splinting by metal or bone graft. Treatment of non-union of fractures. Skin grafting. Various rehabilitative procedures. The use of local, spinal and the various inhalation anesthetics best suited to the case, and needless to remark the usual surgical supplies and equipment, such as splints, special beds, et cetera, should be available for carrying out these procedures as easily and simply as possible.

As regards physiotherapy in the treatment of the injured, I have the impression that it is not so generally advocated today as in the past. The aim of physiotherapy is the restoration of function directly or indirectly and in certain cases is necessary. However, in the majority of cases, detailed instruction and frequent encouragement in active exercises lead to as rapid and as satisfactory a return of function.

PSYCHOTHERAPY

The mental attitude of the injured individual toward his injury and toward the resulting social and economic complications plays an important part in recovery. There develops between the injured person and his physician a certain intimacy and an unusual confidence on the part of the patient. This confidence gives to the physician the ability to influence greatly the injured's mental outlook. The extent of injury should not be minimized, nor, worse, should it be magnified. I have seen more than one man permanently crippled, principally as the result of an inadvertent remark made by a physician as to the hopelessness of his condition.

A healthy mental attitude must be maintained throughout treatment and convalescence. The assistance that the physician gives the patient is in a great part something intangible. Early in the course of treatment a simple and sensible description of the injury should be made. Throughout treatment and convalescence continuous interest in the patient's progress should be maintained. Every assistance should be given the injured person by the physician to develop an independent attitude and when indicated he should assist as much as possible in obtaining for the injured employment suitable to his condition.

COOPERATION

Cooperation between the employer and the physician in the treatment of the injured is felt to be important in several respects. First, the employer should furnish a suitable place and adequate material for proper first aid. The employer should depend on the physician's opinion as to when and to what type of work the injured may return. Frequently a man is able to return to some light form of work several months before he could possibly carry on his regular job. If suitable light work is furnished by the employer on recommendation of the physician, recovery in most cases is greatly hastened. However, if the man is returned to his regular job before he is physically able, recovery is retarded and the man becomes discouraged and entertains fear for his security. With the development of this mental outlook the extent of his injury and disability are increased in his mind. For those who have been disabled for an extended period of time and have apparently recovered normal function, a certain toughening up period before returning to full heavy labor is needed.

The handling of injuries is greatly facilitated for all concerned by those employers who have some one person in charge of industrial accident cases. This person keeps up the necessary records and reports on injury cases. He serves as a liaison officer between the employer and physician and assists in obtaining suitable employment for the injured on recommendation of the physician. Such a person also sees to it that convalescent injury

cases return to the physician as instructed for follow-up care.

In conclusion I might say that I know that there are many phases of the care of industrial injuries which have not been discussed. Time would not permit such a discussion in detail; however, I feel that the essentials have been noted. The one phase which I feel needs special emphasis is the better first aid care of industrial injuries.

SURGICAL ASPECTS OF CHEMOTHERAPY*

By W. HALSEY BARKER, M. D.
Baltimore, Maryland

IT is with certain misgivings and a feeling of trepidation that I as an internist shall attempt to talk on surgical problems when I know that surgeons are present in the room.

Today the single most important use of the sulfonamides in surgery is in the treatment of wounds. In discussing this phase of surgical chemotherapy, I shall draw very freely from a recent paper on the subject by Dr. Perrin Long since this paper brings the subject right up to date:

"The introduction of the use of sulfonamide compounds as prophylactic and curative agents in the field of surgery has not been an unmitigated blessing for the surgical profession, because of a growing tendency to neglect fundamental principles of good surgical judgment and technique and to rely instead upon the wholesale use of the 'wonder drugs'. This undesirable condition has been brought about by a false impression that the sulfonamide compounds are 'cure-alls', and represents a current trend towards an ignorant complacency in respect to the elective and selective uses of these agents.

"There can be no questioning the fact that these drugs have frequently saved the patient of the careless surgeon from disaster, but when sulfonamides fail because of neglect of the use of sound judgment and surgical technique coupled with a lack of knowledge of the fundamental principles of sulfonamide therapy, then too often these drugs are berated as being worthless, when the truth of the matter is that the primary principles of the surgical aspects of the patient's care have been cast aside. One must remember (and too often in the present this fact is being forgotten) *that the use of sulfonamide compounds is an adjunct to surgical therapy and cannot replace it.* However, these drugs can be very valuable aids when properly employed and have permitted the development of certain advances in surgical practices which were considered as being unattainable before the advent of sulfanilamide and its derivatives.

"With the establishment of the proposition that sulfonamide therapy is a valuable adjunct to adequate surgical treatment, then the problem of the use of the sulfonamides in the prophylaxis and therapy of contaminated and infected wounds becomes simplified. In civilian practice, it has been established that many contaminated wounds can be closed directly after an adequate wound toilet has been completed. However, in war wounds (except for very minor lacerations) experience has shown that primary closure is

THE AUTHOR

W. Halsey Barker, graduate Johns Hopkins University School of Medicine, 1932; interneship and residency Johns Hopkins, 1932-38; Assistant in Medicine, Rockefeller Institute Hospital, 1935-37; Asst. Dean and Assoc. in Medicine, Johns Hopkins Medical School; American College of Physicians (Assoc.), American Clinical and Climatological Society.

*Presented before the 75th Annual Meeting of the West Virginia State Medical Association at Huntington, West Virginia, on July 15, 1942.

dangerous and with few exceptions (perforations of the chest or abdomen) such wounds should be left open. It is of interest to recall at this point that the adequate use of locally implanted sulfanilamide in the wounds of our casualties in Hawaii, prevented wound infection, thereby permitting the debridement of some wounds many hours after they had been incurred. Then after a few days, the wounds were so clean that some were secondarily sutured and healing by first intention occurred. Infected wounds should always be left open.

USE OF SULFONAMIDES

"In any consideration of the use of sulfonamide compounds in the prophylaxis or therapy of wound infection, several factors must be considered and among these are the type of surgical procedure employed, the condition of the wound at the completion of surgical treatment, the determination of whether oral and or local sulfonamide therapy will be used, the proper selection of the drug for peroral or local use, the dosage of the drugs to be used, the duration of therapy and finally the utilization of the correct postoperative care in order that the greatest benefits may be derived from the employment of the sulfonamide compounds.

"It has been established that sulfonamides can be used in the prophylaxis and treatment of wounds regardless of the type of surgical procedure that has been employed. As far as is known at the present time, the administration of these drugs is compatible with the use of standard intravenous, inhalation, or local anesthetics and they will not influence adversely either the course or the therapy of traumatic or infectious shock.

"The condition of the wound at the time sulfonamide therapy is used is of importance. Obviously, a poorly debrided, carelessly drained fresh wound is an unsuitable site for the implantation of sulfonamides, and under such conditions the drugs may eventually fail to exert their prophylactic effect. The method of wound closure is important. Topically implanted sulfonamides may cause an exudation of tissue fluids into the wound, and sloughing of the wound edge has been noted as a result of the tension created by such fluid when wounds have been closed too tightly. This possibility should be kept in mind when dealing with lacerations in which especial consideration must be given to the final cosmetic effect. It has been shown that necrotic material or pus contains sulfonamide inhibitors, hence every effort should be made to eliminate and neutralize these substances before sulfonamide therapy is started.

"The experience of the last few years has shown that oral, topical, or oral plus topical prophylaxis with the sulfonamides will prevent wound infection. However, the best evidence available at the present time shows that the administration of these drugs by the *peroral and local* routes is to be desired in the prophylaxis of infection in moderate or serious soft tissue wounds, compound fractures, compound skull or faciomaxillary injuries, and in penetrating wounds of the abdomen or chest. Infection can generally be prevented in minor lacerations involving the skin and subcutaneous tissues or superficial muscle layers, without extensive destruction of tissue, by the topical application of a sulfonamide alone.

SELECTION OF DRUG

"In the selection of the drug of choice for the peroral prophylaxis or therapy of wound infection, the effectiveness of the drug and its toxicity are primary considerations. It has been shown that sulfadiazine is clinically effective against systemic infections produced by staphylococci, hemolytic streptococci, colon bacilli, and members of the aerogenes group. In clostridial infections, this drug has been proved active against experimental infections produced by Cl. perfringens or Cl. septique. It offers a wide range of protection against the common primary contaminating and infecting organisms in wounds.

"In addition to the low incidence of serious toxic effects, sulfadiazine produces comparatively little nausea and vomiting, rarely any degree of cyanosis; mental disturbances and

incoordination are uncommon; endurance is not seriously affected; and acidosis or a lowering of the plasma CO_2 content does not occur. The lack of these side effects is of importance in any consideration of ambulatory wounded and in the transportation by air of injured patients. Against these favorable factors is the known ability of the drug to produce renal damage. Our data shows that one can expect that about 1.7 per cent of patients receiving average doses of this drug will develop either microscopic or gross hematuria, while 0.4 per cent develop oliguria, azotemia or anuria. It is known that a decreased fluid intake with a resulting decrease in the urine output predisposes a patient to this type of renal complication. Hence, where water is scarce as in desert warfare or when temperatures are high and body water loss great, the threat of kidney damage might be considered a deterrent to the use of sulfadiazine. However, the occurrence of this complication appears to be greater when sulfapyridine or sulfathiazole is administered, and one must remember that sulfanilamide produces hemolytic anemia in about 2 per cent of patients to whom it is given. After an evaluation of the various factors involved, it seems reasonable to conclude *that while sulfadiazine can produce serious toxic reactions, it is the least toxic of the four commonly used sulfonamide drugs* and is the drug of choice for the peroral prophylaxis of contaminated wounds and the peroral therapy of infected wounds. If sulfadiazine is not available, sulfanilamide or sulfathiazole should be used in the order named in the peroral prophylaxis or therapy of contaminated or infected wounds.

TOPICAL USE

"Confusion exists in respect to the topical use of sulfonamide compounds. For example, it is commonly assumed that because sulfathiazole is more effective than sulfanilamide in the systemic therapy of staphylococcic infections, its topical use is always indicated where the possibility of the presence of staphylococcic infection exists. This assumption is not necessarily correct because various factors such as the physical characteristics and solubility of the drug, its antibacterial effect in the upper ranges of its solubility, its rate of diffusion and absorption from the local lesion, the effect produced by its local implantation upon tissue repair and wound healing, and the systemic toxic effects which the drug may produce, enter into any consideration of the selection of the drug of choice for topical use in the prevention or treatment of contaminated or infected wounds.

"It has been often observed that when too finely powdered sulfonamide compounds are placed in wounds, they tend to 'cake'. Sulfonamide compounds for topical use, consisting of large crystals or coarsely ground forms of these drugs, dissolve slowly in wounds and tend to initiate foreign body reactions. While the ideal crystal size of these compounds is not definitely known, it has been shown that satisfactory results can be obtained when crystalline sulfanilamide, screened to forty to eighty mesh, is used.

SOLUBILITY IMPORTANT

"The solubility and diffusibility of the compounds under consideration for local use is of importance. Sulfanilamide is soluble in tissue fluids to the extent of from twelve hundred to fifteen hundred milligrams per cent and has been shown by Hawking to diffuse rapidly through living tissue and fairly well through dead tissue. This observer has demonstrated that sulfathiazole, sulfapyridine, and sulfadiazine are much less soluble (184, 61 and 124 milligrams per cent in human serum at 36° C. respectively) than is sulfanilamide, and that sulfapyridine and sulfathiazole diffuse more slowly through living tissues. In our experience, sulfadiazine behaves like sulfapyridine as far as diffusion is concerned. This variation in the solubility of the drugs is important in estimating the possible antibacterial effects of these compounds when they are employed as topical agents; and it has been shown *in vitro* that in the upper range of its solubility, sulfa-

nilamide seems to be as effective an antibacterial agent as are the other sulfonamides at their limits of solubility. This observation is important in the consideration of the sulfonamide drug of choice for local use in the prophylaxis and therapy of wound infections.

"It seems well established that the degree of solubility of the various sulfonamide drugs has a definite bearing upon their ability to produce foreign body reactions when they are implanted locally. Sulfanilamide, because of its high solubility, is least likely to produce this reaction within wounds, with sulfathiazole, sulfapyridine and sulfadiazine in the order named, having increasing possibilities of producing such a reaction.

TOXIC EFFECT

"As far as direct toxic effects upon various types of tissue are concerned, there is disagreement concerning the action of the sulfonamide drugs.

"Out of the welter of conflicting experimental and clinical reports, one fact seems to emerge, namely, that while the local implantation of sulfanilamide may interfere to a certain degree with wound healing, it appears to be the least harmful of the commonly used sulfonamides to regenerating tissues.

"*Thus, when all of the factors have been considered, it seems reasonable to choose sulfanilamide as the drug of choice for the prophylaxis and therapy of contaminated and infected wounds.*

"In considering the peroral prophylactic dose of sulfadiazine needed for the prevention of wound infections, civilian injuries must be differentiated in general from war casualties. In the first instance definitive surgical treatment will probably be given promptly and in most patients the administration of sulfadiazine by mouth can be deferred until just prior to or after definitive surgical treatment. In individuals wounded as the result of enemy action, definitive surgical treatment may be delayed for many hours; therefore, the prophylactic dose of sulfadiazine should be given as soon as possible after the wound has been incurred.

"For adult civilian casualties, the initial peroral dose of sulfadiazine should be 2 to 4 gm. given either immediately before or after definitive surgical treatment, this to be followed by 1 gm. of the drug every six hours for two days, following which doses of ½ gm. every six hours should be administered for eight days.

"In adults, wounded as the result of enemy action, the initial peroral dose of sulfadiazine should be 4 gm. This should be given as soon as possible. After this initial dose, no more of the drug should be given by mouth until after definitive surgical treatment has been completed. Then sulfadiazine, 1 gm. every six hours, should be administered day and night for from seven to ten days. If infection occurs despite the attempt at prophylaxis, the administration of the drug should be continued until the infection is under control. It is important to maintain a daily urine output of at least 1,000 c.c. during the period of treatment in order to lessen the possibility of the occurrence of renal complications. If sulfadiazine is not available, sulfanilamide or sulfathiazole prescribed in the same dosage, may be used. In injured children the doses of these drugs should be adjusted according to the weight of the child in comparison with the adult dose.

TYPE OF CONTAINER

"There is a tendency at the present time to dump sulfonamide compounds haphazardly into wounds. This is a bad practice and it should be emphasized that the implantation of sulfanilamide should be carefully done in order that all parts of the exposed wound surface are in contact with the drug. A shaker-top container makes this easy, although many physicians prefer to use a powder atomizer for applying sulfanilamide locally.

"In wounds that are closed by primary suturing, the amount of crystalline sulfanilamide implanted should approximate 0.05 gm. per square inch of wound surface. This represents a light "frosting" of the wound. In contaminated wounds where closure is not

indicated, or in infected wounds, 0.10 gm. of crystalline sulfanilamide per square inch of wound surface should be used. This represents a heavy "frosting" of the wound. On the basis of our present experience it would seem that not more than 10 gm. of sulfanilamide should be used locally in any given patient within a twenty-four hour period.

"The combination of sulfadiazine by mouth and sulfanilamide locally will produce sulfonamide concentrations in the blood of from six to sixteen milligrams per cent in the first twenty-four hours in patients whose wounds are closed. If, however, the wounds are left open, then concentrations of sulfonamide in the blood of from five to ten milligrams per cent will generally be noted in the first twenty-four hours of therapy.

"It has been previously mentioned that peroral therapy with sulfadiazine may be discontinued in from seven to ten days, if symptoms and signs of infection are lacking. However, experience has repeatedly shown that it is necessary to repeat the local application of sulfanilamide to wounds at each dressing period if both primary and secondary wound infection are to be prevented. Local therapy with sulfanilamide should be continued until healing is complete.

INHIBITORS

"The successful treatment of contaminated or infected wounds is influenced by the amount of necrotic tissue or purulent material in the wounds, because those substances act as sulfonamide inhibitors. Therefore, if a wound shows evidence of infection, it should be gently irrigated with physiological saline at each dressing, or perhaps better, with a mild oxidizing agent such as a 1 to 3300 solution of azochloramide. (Such solutions should be stored away from light in brown glass bottles). It has been shown that this latter compound is effective in neutralizing the effects of sulfonamide inhibitors and indeed there is some evidence that azochloramide acts synergistically with the sulfonamides. Recent experience has also shown the value of utilizing dressings moistened with a 1 to 3300 solution of azochloramide in the prophylaxis of contaminated, and the treatment of infected wounds. These dressings can be placed in the wound after crystalline sulfanilamide has been applied and sealed over with boric acid ointment or vaseline gauze to prevent them from drying. It is very important to keep the wound dressing moist in order to prevent caking."

Earlier in the afternoon I spoke of the prophylactic use of succinyl sulfathiazole in large bowel surgery. This is an important recent contribution which should bear fruit in the future of colonic surgery.

Many surgeons are now dusting sulfanilamide powder freely in the peritoneal cavity after removing a gangrenous or ruptured appendix; also in cases of primary peritonitis. This practice, along with the use of intravenous sodium sulfathiazole or sodium sulfadiazine postoperatively in such cases, has served to cut down on the case fatality rate tremendously. Postoperative pneumonia, so greatly dreaded in elderly patients or after prolonged anesthesia, is readily amenable to sulfadiazine therapy since the majority of cases are due to a pneumococcus. Postoperative pneumonia should be treated in exactly the same manner as lobar pneumonia.

The best treatment for burns is still a controversial subject. One form of sulfonamide therapy which has given promising early results is the sulfadiazine spray method of Pickrell. The solution to be sprayed consists of 3 per cent sulfadiazine in an 8 per cent aqueous solution of triethanolamine. After the burned area has been debrided, it is sprayed with the sulfadiazine solution every hour the first day, every two hours the second day, every three hours the third day, and every four hours the fourth day. By this time a tough eschar has formed beneath which healing takes place in the majority of cases without infection, excessive loss of fluid or appreciable pain.

DISCUSSION

Dr. F. C. Hodges: What strength solution do you use for injection of sodium with sulfadiazine?

Dr. Barker: Five per cent solution made up in sterile or distilled water, but not to be sterilized after the drug is added; sterilize the water first.

Dr. John E. Cannaday: These slides are based upon a collection of statistics from a series of surgical operations done by myself and several of my surgical associates, and in all of these cases a similar technic was used. I just wanted to show them to illustrate the results after a careful review of the records, to indicate the possible good effects of sulfanilamide in conjunction with other methods.

(Slide) All of these cases were sutured in the same way and all were closed with cotton thread sutures. All of these are laparotomies. There are 910 cases shown there, with 7 infections, a percentage of .77 per cent.

There are 129 cases listed there closed with catgut, with 8 infections, or 6 per cent. All had sulfanilamide and irrigation of the wound with saline.

(Slide) Here is another series. These were contaminated wounds, mainly perforated appendices and gangrenous appendices, and that sort of thing. Out of 175 cases there were 30 infections. Those were closed with cotton. In 31 cases closed with catgut, there were 8 infections. The percentage with cotton was 17 per cent; with catgut 26 per cent.

All of these cases had sulfanilamide placed in the wound after copious irrigation with saline.

Sulfanilamide was used in the wounds prior to closure in all of these cases. We used a type of sulfanilamide produced by one of the manufacturers that is granular or crystalline and therefore more soluble. We have found that the finely powdered sulfanilamide put out by some of the manufacturers tends to cake. We have also used, in addition, in a great many of these wounds, sulfathiazole as well. We make it a point to rub the sulfanilamide and sulfathiazole very carefully into the wound before closing. We have not found that either of these drugs interferes materially with wound healing. We feel that the protective effect against infection greatly offsets any such interference. It is our belief that the occasional formation of serum in the wound is usually due to the too lavish use of the drug. We have had, through the courtesy of the manufacturers, the opportunity of using the newer drug, succinyl sulfathiazole, as a prophylactic previous to bowel resections in large bowel surgery, although we have not used it in very many cases. Altogether, several of my surgical associates and I have used it in about 14 or 15 cases—but at least none of them has died and most of them have gotten by without wound infections. The results are apparently quite gratifying and I believe this will make large bowel surgery much simpler and easier.

As Dr. Barker said, it is too much to expect that sulfanilamide or sulfathiazole will take the place of careful work, but we feel that it is a great deal of help.

As Dr. Barker has pointed out, the use of succinyl sulfathiazole after the operation, tends to prevent distention of the abdomen. I recall that one of our internists wanted to use succinyl sulfathiazole in a case of typhoid fever, so I wired the medical representative of Sharp & Dohme who replied that he would not advise it. He said that the only effect that they had noted after the administration of succinyl sulfathiazole in typhoid cases was an absence of meteorism. I may say further that the effect of succinyl sulfathiazole is nullified by giving the patient mineral oil or any derivative of mineral oil, and, again, that succinyl sulfathiazole produces frequent painless stools and does interfere with the alimentation of the patient. The food passes through the bowel not completely digested.

Dr. F. C. Hodges: What do you use on hospital patients and ambulatory patients, and how frequently?

Dr. Barker: All I can say about that is that on hospital patients we take a white count at least every two days; although the danger of anemia from sulfadiazine and sulfapyridine is relatively slight, it is great in sulfanilamide. Two per cent usually get anemia from sulfanilamide, and they should have a count at least every other day.

The danger of agranulocytosis, as a rule, is a later danger, coming after the tenth day, in the majority of cases that have been reported. However, we feel if we can have the facilities for a white count every other day it is desirable to do one. Perhaps you will see the white count dropping and be able to stop your drug if the white count goes below 3500 or the polys below 50 per cent. We also examine the urine for gross blood at least daily on hospital patients, and that is checked up at least twice a week—the urine output and the fluid intake.

Of course, all of those things are not practical on the ambulatory patient. We do feel that for the

pneumonia patient at home it is not too much to ask the family to collect the total urine each day and keep it in a large bottle so when the doctor makes his call he can tell at a glance whether it is bloody and whether there is enough urine there. You can stop the drug therapy before you are likely to run into blood dyscrasias.

We think the most important thing on the ambulatory cases is to see the patient daily, because you can see whether he is jaundiced, or whether he is pale; you can take his temperature and see if he suddenly shoots a fever, and you can look at him quickly to see whether he is developing a rash. Those are observations that can be carried out without the aid of any special laboratory equipment.

Dr. H. G. Steele: For the last couple of years, in cauterizing the endocervix I have been following up by dusting some powder up in the wound after the operation and then curetting that every few days, curetting the necrotic tissue and applying some more, and I find these cases heal very rapidly.

NASAL ALLERGY IN CHILDREN

By ALBERT E. LONG, M. D.
Weston, West Virginia

NASAL allergy, particularly in children, has not received from the profession the attention commensurate with its importance. This condition has long been an enigma to many and its adequate management and treatment still more difficult of attainment.

Vaughan and others have believed for some time that allergy is merely a pathological exaggeration of a normal response to a stimulus. Accordingly, with varying degrees of sensitivity, many atypical subjective symptoms may be found and likewise the appearance of the nasal mucous membrane may vary from normal to pale, boggy and turgescent. Hansel has reported that in only 54 per cent of his patients could the diagnosis be made by the appearance of the nasal mucosa alone.

Symptoms attributable to nasal allergy are many and varied. Most commonly, nasal obstruction and, to a lesser extent, serous discharge and repeated sneezing are complained of. Secondarily there is loss of the senses of taste and smell and as a further result, loss of appetite. In the severer cases symptoms of sinusitis may supervene as a result of long standing edema of the middle and inferior turbinates of the nose and the mucosa of the maxillary sinuses. This edema interferes with ciliary action and eventually polyps form which mechanically obstruct drainage.

THE AUTHOR

Dr. Long, graduate University of Virginia Department of Medicine, 1935; interned University of Virginia Hospital and C. & O. Railway Hospital, Clifton Forge, Va.; Resident Ophthalmology and Otolaryngology, University of Virginia Hospital; Licentiate American Board of Ophthalmology.

In other cases the physician is consulted primarily because of frequent head colds or sensitivity to slight alterations in temperature. It should also be emphasized that frequently allergy of the lower respiratory tract, such as bronchial asthma, may be the chief complaint and nasal allergy may be observed only in routine examination.

The most important factor in diagnosis is a thorough and painstaking history since in 60 to 70 per cent of cases there will be a family history of allergy. As an adequate history is rarely obtained by an otolaryngologist, we feel that a thorough investigation should always be made by a physician interested and experienced in allergy. He should also carry out any dermal tests with a group of allergens and should have sufficient interest, time and energy to ascertain the results and follow-up the case. Skin testing is valuable but can be notoriously inaccurate and misleading except in skilled hands.

Otolaryngologic investigation consists of careful analysis of symptoms such as itching, obstruction, discharge and sneezing. A thorough inspection of the nasal mucous membrane and sinuses is called for and all pathological alterations should be noted. Since edema and eosinophilic infiltration constitute the findings of the shock tissue of allergy, cytological examination of the nasal secretion is demanded, for thereby many borderline cases can be diagnosed. Furthermore, by cytological studies one can determine the clinical course of the disease in relation to any complicating infection. The demonstration of eosinophiles in the nasal secretion is practically pathognomonic of active allergy. Neutrophiles likewise indicate superimposed infection and relative proportions of the two indicate the nature and stage of infection.

PREPARATION OF SLIDE

Hansel has found methylene blue and eosin to be most satisfactory in demonstrating eosinophiles. The slide is first stained with eosin 1:200 for one minute. Fresh distilled water is added and allowed to stand for one minute. This is then drained off and the slide flooded with distilled water until all free stain has been removed. Ninety-five per cent ethyl alcohol is then flooded on and drained off, followed immediately by methylene blue, 1:200 for ten seconds. Distilled water is again added and the slide then washed with distilled water and finally flooded with 95 per cent ethyl alcohol.

Roentgen studies of the nose and accessory sinuses are also of value as many patients with allergy suffer from concurrent sinusitis and in practically all of these cases edema of the mucous membrane of the sinuses can be demonstrated. It is, therefore, considered inadvisable to carry out x-ray studies during acute exacerbations.

The management of allergic children should, accordingly, be carried out by allergist and otolaryngologist. The parents should help the child to avoid offending allergens, and extracts, properly given, will be of value in many cases. A considerable number of these children will be found to be allergic to bacteria or their own organisms. Dramatic results are often obtained from properly prepared bacterial vaccines. It must be admitted that the existence of bacterial allergy is controversial but in our experience the results have justified the use of prepared and even stock vaccines.

To the otolaryngologist falls the duty of correcting obstruction and treating incidental sinusitis. Tonsillectomy and adenoidectomy are, of course, indicated in certain children with nasal allergy but the procedure usually does not influence the course of the allergy nor does it often relieve the obstruction. In fact, many allergists feel that the condition is, at times, aggravated by the procedure, especially when the operation is done during the summer vacation when the pollen concentration of the atmosphere is high. There is also a marked tendency toward the development of "granular pharyngitis", (recurrent nodules of lymphoid tissue in the pharynx and nasopharynx), following adenoidectomy in these cases. These nodules are highly susceptible to inflammatory processes and thus aggravate the allergy. Therefore, tonsillectomy and adenoidectomy should not be done indiscriminately in allergic children, for in many cases where the operation was done with the hope of relieving mouth breathing and nasal blockage, not only was no relief obtained, but severe aggravation of allergic symptoms ensued. The nasal status of any child should be thoroughly investigated before such procedure is warranted.

OPERATIVE PROCEDURES

Operative procedures and manipulations in the nose of an allergic individual, while frequently necessary, at times produce violent reactions. Electrocoagulation of hyperplastic tissues and polypi and the use of an electrodessication needle within the inferior turbinates are preferred since these procedures cause no loss of nasal mucous membrane. Massive polypi, of course, require excision by the usual method. Concurrent

sinusitis should receive conservative active treatment. After the establishment of better drainage and aeration, the desensitization of the patient must be continued indefinitely to prevent a recurrence of the degeneration of nasal and sinus tissues. The proper follow-up of these cases would obviate the necessity for much radical sinus surgery in later life.

BIBLIOGRAPHY

1. Hansel, F. K.: Ann. Otol., Rhin. and Laryng., 49: 579-627, September, 1940.
2. Langley, W. D.: *"Allergic Rhinitis"*, Trans. 47th Meeting Am. Lar., Rhin. and Otol. Society.

PELVIC INFLAMMATION AND ASSOCIATED OVARIAN CYSTIC DISEASE*

(Report of Five Cases)

By W. N. ROWLEY, M. D., F. A. C. S.
Huntington, West Virginia

THE treatment of the ovary when dealing with bilateral salpingitis of long standing, whether of specific origin or associated with parametritis of puerperal origin, is a problem of some concern.

The conservation of ovarian tissue wherever possible is the accepted practice. Especially is this true in patients in their reproductive period. Consequently, one or both ovaries are spared whenever the chance of survival of the ovarian function is better than the chance of ovarian destruction as the result of subsequent pelvic pathological change resulting from the primary operation for inflammatory disease, whatever the etiology. It is this conservative attitude which now comes under critical scrutiny as the result of my own practice of conserving the ovary.

It must be realized that cystic degeneration of the ovary can and does occur whether or not the patient has been previously operated upon for pelvic inflammatory disease or for any pelvic condition. It is true, however, that pelvic peritonitis with its resulting adhesions and the resultant thickening of the ovarian theca is conducive to ovarian degeneration of a cystic character. In the classification of ovarian tumors as outlined by various authors, inflammatory ovarian cysts are classified as follows: (1) inflammatory cysts associated with pelvic inflammatory disease and (2) inflammatory cysts not associated with local inflammation.

THE AUTHOR

W. N. Rowley, graduate Northwestern University; interned Chicago Lying-in Hospital; Postgraduate work, Mayo Clinic Staff, 1919-1923; Rowley Clinic Hospital; Fellow American College of Surgeons; Mayo Clinic Alumni Association; Medical Review Society, Huntington.

Simple inflammatory cysts are described as of little clinical importance and rarely exceed the size of a walnut. I feel that the inflammatory cysts are of more importance than we have believed them to be.

Inflammatory cysts associated with pelvic inflammation and those without an associated intraperitoneal disease are basically the same and the degree of infection is the only distinguishing difference. In the presence of associated pelvic inflammation which in intensity overshadows the ovarian inflammation, often the pathological picture is clouded. We see an ovary that appears normal except for the presence of edema which can be attributed to the general pelvic reaction, and which can be assumed will subside when the associated pathological condition has been removed. Unfortunately there is no method whereby microscopic study can be applied to the ovary before the decision to save or remove the organ has been made. Consequently, some ovaries will be saved in which cystic degeneration has already begun and

*Read before the Medical Review Society, Huntington, West Virginia, October 1, 1942.

which will necessitate a removal of this ovary some years later. Also, there is no way to predict the peritoneal reaction of the pelvic tissue after an operation has been done for the removal of inflamed pelvic organs. The density and multiplicity of adhesions and the formation of serous pockets which may follow an operation are unpredictable. One patient may have extensive and acute peritoneal reaction and heal with a formation of minimal adhesions, while another may have a much less acute pelvic reaction as judged by gross observation, yet heal with many dense adhesions. When these adhesions occur and involve the ovaries, sooner or later their strangulating effect will institute cystic degeneration in one or both. Before briefly presenting some case histories illustrating the above described clinical pathological entity it may be said that the general method of handling pelvic inflammatory conditions in all these cases has been essentially an attempt to remove as much of the diseased tissue as possible and to conserve as much as possible of the tissue less extensively involved. The age range of the patients involved is from 18 to 32 years at the time of their first surgery. In all cases the second operation was necessary to remove a large ovarian cyst that had developed in the ovary which previously had appeared sufficiently normal to justify its conservation. The time interval between the first and second operation for the removal of ovarian cyst varied from two to eight years. Conservation of the ovarian function was felt to be worth while in these five cases.

CAUSES OF CYSTIC DEGENERATION

Cystic degeneration of the ovary may occur at any age from infancy to menopause, but the primary cause of the disease is a chronic nonsuppurative, tenacious, sclerosing infection from general fevers, or from a focus of infection in close proximity, or blood-borne from a remote source. In the face of these facts, to leave intact an ovary grossly normal when the other ovary is grossly pathological, seems to be denying the truth of the accepted facts. These cases bear out this statement. However, these five cases, in which degeneration occurred in the remaining ovary, represent but a small percentage of all cases operated upon in which one ovary was left to function because grossly it appeared normal. Also there may have been other cases among those records available to me that have had degenerative changes take place in the remaining ovary in which the patient did not return to me for further surgery. There may have been some patients who have refused further surgery or have not suffered sufficient discomfort to bring them to treatment. For this reason no percentage figures can be of any value.

Five cases in a series of surgical procedures covering fifteen or more years does not seem high. The age of the patients at first operation was so young in four instances that the problem faced was most difficult. To evaluate the mental and moral effect of a total ablation operation upon these patients, placed great responsibility upon the surgeon. Today, with better, more specific and more concentrated ovarian hormone preparations for substitution a more radical viewpoint may be taken in the face of these experiences. In cases of definite pelvic inflammation and associated cystic degeneration of one ovary, subsequent involvement of the other ovary is highly probable. Whether cystic degeneration takes place to the extent that tumor becomes a prominent symptom is not so important as the loss of function from the remaining ovary resulting from such degeneration. A very high percentage of these patients experience functional failure and menopausal symptoms within three years from the time of operation. What, then, is the real gain by leaving one ovary? The mental state of the patient probably outweighs all other considerations. The knowledge that she still retains one ovary soothes the sensitiveness of the patient and that abject feeling of total loss with all its side effects upon her mental attitude has been postponed. The slower onset of the menopausal state seems better tolerated.

Since the advent of the sulfonamides there will be fewer primary pelvic parametrial infections. A sharp drop in the specific pelvic inflammations has already become apparent. What effect these drugs will have upon secondary or blood-borne pelvic perimetritis, parametritis and ovaritis with cystic degeneration remains to be seen.

More radical surgical treatment of the ovaries, that is, bilateral removal, especially in the 30 to 40 age group, in conjunction with surgery for pelvic inflammation, may become increasingly justified.

CASE REPORTS

Case 1.—Mrs. C. was first operated on at the age of 18, because of pain in the right side and a feeling of fullness in the right lower quadrant. Through a midline incision the pelvis was explored and her surgeon told her at the time that only the appendix was removed. No relief from her symptoms was gained by this operation. At the age of 20 she was operated on for cyst of the right ovary, her symptoms being pain in the right side, more or less constant throughout the menstrual cycle and more severe during the period. At this time I removed a large intraligamentous cyst 4 inches in diameter from between the leaves of the broad ligament on the right side. She also had a right hydrosalpingitis which is so often associated with intraligamentous cyst. The left tube, which was also removed, showed a subacute infiltrative salpingitis. The left ovary appeared normal and was tacked to the round ligament laterally according to the method described by Curtis. For seven months following this operation the patient had no pain in either side. Her weight remained stationary. She menstruated every thirty days, the flow being moderate in amount. She then began to have a slowly diminishing menstrual flow and pain in the lower left quadrant of the abdomen very similar to the pain she had experienced on the right side. She also felt that there was a mass in the left side. In four months time she gained thirty pounds, began to have hot flashes, and the menstrual flow disappeared. Two years from the time of the removal of the right ovarian tumor, she was operated on for an intraligamentous cyst arising from the left ovary. She was now 22 years of age and had had three operations, two of which were for ovarian tumors. Her weight now is remaining stationary although she is 10 pounds heavier than she was at the time of her second operation. Her menopausal symptoms are easily controlled with minimal doses of ovarian hormone.

It is quite possible that cystic degeneration began in the ovaries of this woman at an early age and that there were changes in the right ovary not grossly recognizable at the time of her first operation, as the sequence of events seems to indicate. Who would be so bold as to remove both ovaries in this girl at the age of 18? It would have been less radical to have taken her left ovary at the age of 20. Yet there are many cases where one ovary is left behind to function and survive for many years.

Case 2.—Mrs Y., aged 19 at the time of her first operation, complained of pain in the lower right pelvic region and at times pain on the left side which dated from the birth of a child two and one-half years previously. Her delivery, which was at home, was followed by a long period of fever and pain from which she finally recovered. She had a severe laceration of the perineum at the time of delivery and since then the periods had been irregular and scanty. At operation, in addition to perineal repair, both tubes and a cyst 3 inches in diameter arising from the right ovary and located between the leaves of the broad ligament were removed. The greater portion of the uterine fundus was also removed because the raw surfaces on the uterus left by the numerous adhesions could not be peritonized. The left ovary was involved in adhesions which were freed. The ovary appeared fairly normal and was tacked laterally to the round ligament according to the method of Curtis. One year after this operation the patient complained of dull headache, nervousness, hot flashes and ammenorrhea with flow occurring every six to eight weeks which was no more than a slight stain of tarry material. She was given hormone treatment which controlled the nervous symptoms and she had one menstrual period in the following three years. Four and one-half years after the first operation she returned, complaining of pain in the left side. On examination a mass was felt which was believed to be a cyst of the left ovary. At operation a cyst of the left ovary, about 3 inches in diameter and bound down by dense adhesions, was dissected free and removed. Postoperatively the patient had marked serosal inflammation of the pelvis with a

tenseness of the whole pelvis. She complained of mild menopausal symptoms. Complete healing of the pelvic pathological condition was accomplished by Elliott treatments. Hormone therapy controlled the nervous symptoms and when seen two years after her last operation she had gained weight, was in good general health and expressed the wish that both ovaries had been removed at the first operation.

Case 3.—Mrs. A. was 22 year old at the time she was first operated upon which was done elsewhere. The right tube and ovary were removed as was the appendix. She was told that the ovary was cystic. This patient was first seen by me ten years later at the age of 32. She complained of pain in the left side. The menses were scanty, but there were no hot flashes. At operation a large unilocular cyst of the left ovary was found. This cyst was resected along with the left tube and fundus of the uterus because of the dense adhesions. A small portion of the left ovary appeared normal in character and was left in. This patient had regular periods and no hot flashes or nervousness for four and one-half years. She then developed pain and fullness in the left side, hot flashes, nervousness and bleeding from the rectum. On examination a large cystic mass was felt in the left side of the pelvis. At operation, at the age of 37, a second cyst was found which had arisen from the small piece of ovary left behind at operation five years previously. Many dense adhesions surrounded this tumor which was about 8 inches in diameter. Hormone therapy controls the nervous symptoms satisfactorily.

Case 4.—Mrs. F., was 23 years of age at the time of her first operation which was done elsewhere. She had both tubes, part of the uterus and the right ovary removed at this operation. She had never menstruated since the first operation, although she had not complained of hot flashes until about six months before her second operation. At this time she complained of pain in the left side, headache, nervousness, and hot flashes. During this six month period she had no treatment. At the age of 27, five years from the time of the first operation, she appeared for examination at which time a large cyst of the left ovary was found. At operation an intraligamentous cyst arising from the left ovary was removed. She was placed on hormone therapy which controlled her nervous symptoms. No recent information can be obtained about her present condition as she cannot be located.

Case 5.—Mrs. G. was first operated upon at the age of 32. Her preoperative diagnosis was parametritis, bilateral salpingitis and pelvic laceration. At operation, pelvic repair, bilateral salpingectomy and supravaginal hysterectomy were done. Both ovaries, although somewhat larger than normal, appeared normal enough to be left intact. For five years following operation the patient had no symptoms although she did not menstruate. Symptoms of failure of ovarian function then began to appear in the form of dull headaches and nervousness. These symptoms were followed by pain in one side or the other associated with backache. Examination revealed a cystic mass about 2 inches in diameter in the left side which was probably ovarian. The right ovary was also enlarged and cystic. Hormone therapy for a year relieved the pain, and the pain in the right side disappeared entirely. A year later the discomfort in the left side increased and was more or less constant. The backache returned and treatment did not give any relief. She had not had hot flashes. Eight years from the time of the first operation, a second operation was done and both ovaries were found to be bound down by dense adhesions with many serous pockets containing serous accumulation. The right ovarian cyst was the size of a large hen's egg while the left ovarian cyst was the size of an orange. Both were removed. Postoperatively, this patient who had a parametritis originally, like the first case presented, had the same pelvic tenseness and serosal induration of the pelvic tissue. Heat therapy relieved this condition. Hormone therapy controlled the hot flashes which appeared in a mild form eight weeks after operation. This patient was 40 years of age at the time of her second operation. She expressed her satisfaction at having had her ovarian function for the intervening eight years in spite of the discomfort of the past two years.

The preponderance of inflammatory changes in the pelvis in all the cases presented seems to point to the conclusion that these tumors were inflammatory cysts. The cystic degeneration of the portion of ovary left following resection of the large unilocular cyst points to the precept that slow, progressive, degenerative change had been in progress for many years.

ERYTHROBLASTOSIS NEONATORUM

(Report of Two Cases)

By A. P. HUDGINS, M. D.
Charleston, West Virginia

ERYTHROBLASTOSIS NEONATORUM is a blood dyscrasia of the newborn manifested by anemia and the presence of erythroblasts and marked leukocytosis, having definite clinical characteristics and marked by a high fetal mortality. Renewed interest, especially in the etiology of this disease, has recently followed the outstanding work of Philip Levine and his co-workers. Investigation of intragroup transfusion accidents, especially those associated with pregnancy, led to the study of the importance of iso-immunization of the mother by blood factors in the fetus transmitted from the father.

The Rh (Rhesus) factor is an antigen present in the red blood cells of the Macacus Rhesus monkeys and in those of about 85 per cent of human beings. It is this intragroup of agglutinogens first described by Landsteiner and Weiner which is thought to be the factor involved in the reaction and which is inherited as a dominant factor.

The theory as to the etiology of erythroblastosis foetalis is that it is the result of iso-immunization of the Rh-negative mother by the Rh-positive blood of the fetus and the subsequent passage of the mother's agglutinins through the placenta to act on the susceptible blood of the fetus. In the series of cases presented by Javert, the usual Rh-positive infant and father, and Rh-negative mother, were found in only 79 per cent of the cases, suggesting the possibility of some accompanying etiological factor. The destruction of the fetal cells by hemolysis demands the outpouring of the erythroblasts with an accompanying increase in the leukocytes.

The special procedures and technics used in the diagnosis of this condition are found in the work of Levine et al.

THE AUTHOR

Dr. Hudgins, graduate Medical College of Virginia; interned Sheltering Arms Hospital, Richmond; resident, New York Cancer Institute; Postgraduate work, Bellevue Hospital, N. Y. C., Post Graduate Hospital, N. Y. C.; Obstetrics, Chicago Lying In Hospital.

Erythroblastosis foetalis is a condition which demands the attention of obstetricians as well as pathologists and pediatricians for the following reasons:

1. Immediate attention should be given the newborn. A blood study should be made to confirm the diagnosis and transfusions should be instituted without delay.

2. The presence of this disease in the newborn should act as a warning in giving blood transfusions to the mother.

3. The parents should be told about the possible dangers of future pregnancies.

4. The possibility of iso-immunization as a cause of habitual abortion or miscarriage must be borne in mind as an etiological factor in cases otherwise unexplained.

By recognizing promptly the clinical symptoms of erythroblastosis foetalis, the newborn can be given early treatment which offers more hope for life. There are four chief clinical groups, depending on the most prominent feature encountered: (1) hydrops, (2) jaundice, (3) anemia, (4) hemorrhagic diathesis, and some cases as yet unclassified.

Hydrops foetalis universalis gives the typical appearance of generalized edema. These infants may even simulate monsters and there may be difficulty in the process of delivery.

Icterus gravis (familiaris) is a type characterized by a yellowish cast to the infant,

vernix, and, at times, the placenta. The placenta is usually large and edematous.

The congenital anemias represent a group in which the jaundice is less prominent and the pallor or anemia is the symptom which should arouse suspicion. There are many types of anemia which are mentioned in this connection, i. e.: Cooley's anemia, erythremia of Italian authors, and Jaksch-Heyne's anemia.

Should any of these clinical signs (hydrops, jaundice, anemia or hemorrhagic manifestations) appear, it is an indication that further studies should be carried out on the child at once. There is usually some hepatic and some splenic enlargement. The laboratory studies are diagnostic and include anemia, with erythroblasts, and an increase in leukocytes (50,000 to 100,000). If the child lives, its course is marked by poor gain in weight; there is achlorhydria, diminished or absent motor activity, and irritability.

ERYTHROBLASTOSIS

The presence of erythroblastosis in the infant indicates that there is a dangerous factor in the mother's blood elements which makes transfusions, especially from the husband, a hazard. If anemia is found in these mothers, bringing up the possibility of the need for transfusions, the mother and donor should be carefully matched by the standard four type classical method and then be tested for the Rh-factor reaction. If the mother is transfused with blood containing these antigens (Rh-positive factor), the destructive antibodies (agglutinins) in her blood may cause hematuria or anuria, or both. When transfusions are required, if there is doubt and one is unable to examine for Rh-factor, a blood substitute (blood plasma) is preferable.

The parents should be warned about the possible recurrence of this unfortunate condition. It is due to the presence of the antibodies (or agglutinins) developed from the reaction of an Rh-positive on the Rh-negative factors in the maternal blood. This danger continues as long as the husband and wife remain mates and occurs according to the mendelian law. The occurrence of erythroblastosis in subsequent pregnancies among women whose first child had the disease is a certainty. In instances where among several children one or more have erythroblastosis, the disease will occur in approximately 53 per cent of subsequent pregnancies, according to Javert. It is possible that with re-marriage the husband's blood may not cause this reaction.

It is wise to bear in mind that repeated miscarriages may be caused by this condition if the reaction is very violent in early fetal life. No known treatment can correct this, but futile attempts in therapy may be avoided if the blood typing for Rh-factor shows a positive and negative mating. The prognosis is very poor, as 70 per cent infant mortality is usually reported in various series presented.

The point of interest in case No. 1, herewith reported, is the fact that this was the first pregnancy. Usually these cases occur in the second, third or fourth pregnancies. The first pregnancy is "required" to sensitize or initiate the antibody development. The second case was clinically suspected and "diagnosed" by the antepartum history.

CASE REPORTS

Case 1. The mother was a 30 year old white primipara. (Sterility studies had revealed overweight, a basal metabolic rate of -14, and pregnancy followed treatment by tubular insufflation, diet, thyroid medication, exercise, etc.) The husband was found to be normal.

The course of pregnancy was uneventful except for a rise in blood pressure (154 systolic, 90 diastolic) during the last month.

The delivery was a breech presentation and somewhat prolonged. The child was slightly sluggish and there was some jaundice present. The pediatrician made the diagnosis of erythroblastosis and instituted treatment. The child became very cyanotic, with shallow respiration, about 18 hours after birth, but responded to treatment (transfusion).

The blood count on baby at birth was as follows: Hemoglobin, 52 per cent; erythrocytes, 2,700,000; leukocytes, 108,800; color index, .96; lympho-

cytes, 24 per cent; monocytes, 3 per cent; neutrophils—6 immature, 66 regular, 72 per cent; eosinophils, 1 per cent; nucleated red cells, 76 per 1,000.

The mother went into mild shock but responded to shock therapy (position and intravenous fluids). A transfusion after careful blood matching, was given later without reaction and recovery was uneventful.

Case 2. A 25 year old, white, grava 9, reported for antenatal care for the first time during the seventh month of gestation. The patient gave a history of nine pregnancies with only two living children, as follows:

1. 1930—miscarriage at 3 months.
2. 1931—miscarriage at 3 months.
3. 1932—delivery at term. Child died at age of 20 months from diphtheria.
4. 1933—delivery at term. Child died when 2 days old of "yellow" convulsions.
5. 1934—delivery at term. Child died when 14 days old of hemorrhage of navel.
6. 1935—delivery at term. Child died when 5 days old. Was "yellow". Did not eat.
7. 1937—delivery at term. Living. "Yellow" at first. Transfusion given.
8. 1939—delivery at term. Living. "Yellow" after birth.
9. 1942—delivery at seven and one-half months. "Congenital hydrops." Erythroblastosis. Stillborn.

The patient was well developed and well nourished. Blood pressure 110 systolic, 40 diastolic. Wassermann test was negative. Urine was normal. Fetal heart beat heard in lower left quadrant. Size of fetus indicated a pregnancy of from seven to seven and one-half months. The possibility of erythroblastosis foetalis was considered from the history given and the mother was told that some trouble with the baby was anticipated.

Three weeks later the mother reported to the hospital in labor with the history of absence of fetal movements for the preceding two days. An edematous monster was delivered which gasped feebly a few times and died. Permission for autopsy was granted and the report was as follows: Erythroblastosis foetalis. Marked ascites (500 cc.); extensive general edema; slight enlargement of liver; marked splenic tumor; petechiæ of scalp and epicardium.

NOTE: I wish to express my sincere appreciation to Dr. Harry Baldock, pediatrician, and to Dr. W. Putschar and Dr. O. Lowy, pathologists, for their cooperation and assistance.

SUMMARY AND CONCLUSIONS

Erythroblastosis foetalis is a blood dyscrasia of the newborn presenting signs usually recognizable clinically. Early treatment is essential.

REFERENCES

Albrecht, A.: *Erythroblastosis of Newborn.* Schweiz. med. Wchnschr. 69:146-148. February 18, 1939.

Burham, Lyman: *The Common Etiology of Erythroblastosis. Accidents in Pregnancy.* Am. J. Obst. and Gyn. 42:373-556. September, 1941. P. 389.

Hellman, Lewis M., and Irving, F.: *X-ray Diagnosis of Erythroblastosis.* S. G. & O. 67:296-298. September, 1938.

Javert, C. T.: *Further Studies on Erythroblastosis Neonatorum of Obstetric Significance.* Am. J. Obst. and Gyn. 42:921-940. *Erythroblastosis foetalis as Cause of Infant Mortality.* Am. J. Ob. and Gyn. 34:1042-1044. December, 1937.

Levine, Philip; Katzin, Eugene; Burham, Lyman: *Iso-Immunization in Pregnancy. Its Possible Bearing on the Etiology of Erythroblastosis Foetalis.* J. A. M. A. Vol. 116. P. 825. March 1. 1941.

Levine, Philip: Editorial. Am. J. Obst. and Gyn. Vol. 42. P. 165. July, 1941.

Levine, Philip; Burham, Lyman; Katzin, E. M.; Vogel, Peter: *The Role of Iso-Immunization in the Pathogenesis of Erythroblastosis foetalis.* Am. J. of Obst. and Gyn., vol. 42, P. 925. December, 1941.

Maclin, Madge Thurlon: *Erythroblastosis foetalis. An Account of Fetal Mortality.* Am. J. of Obst. and Gyn. 38:14-27. July, 1939.

Use of Pooled Blood Plasma and Serum

In pools of a sufficient number of samples of plasma or serum obtained from donors belonging to all four blood groups the amount of substances, known as anti A and anti B agglutinins, which might cause serious reactions is reduced to such a low level that no danger can result to patients from injection into a vein of even large therapeutic doses from such pools, William Thalhimer, M.D., New York, declares in *The Journal of the American Medical Association* for December 19. His statement is based on his own investigations as well as an analysis of data of other investigators and is in answer to several recently published opinions questioning such a procedure on the basis of the possible danger from the injection of incompatible agglutinins or incompatible A or B substances.

Tuberculosis Abstracts

Furnished Through the Courtesy of the West Virginia Tuberculosis Association

Tuberculosis and the War

Information from countries in the war area regarding present health conditions is limited and unsatisfactory. In certain European countries extreme hardship is being undergone, due especially to nutritional inadequacies. Evidences are already appearing that a sharp rise in tuberculosis encountered during the last war may again be expected, and with increasing severity. Although the death rate from tuberculosis in the United States showed its usual decline last year, increasing effort must be made to maintain this favorable situation.

The world conflict of 1914-18 for the first time revealed tuberculosis as a major problem. From the early discovery of large numbers of tuberculous troops in the French army to the final assemblage of mortality records of the war years in the civilian population of all countries engaged, it was evident that tuberculosis was exacting a great toll, unrecognized in the wars of previous years. There is every reason to believe, however, that long wars accompanied by privation have always led to increase in tuberculosis. Crowding, malnutrition, exposure to infection and hardship of every sort have been considered responsible in different degree.

Fortunately, a quarter of a century of research since the last World War has led to a better understanding of methods for control of tuberculosis. Countries fearing the ultimate outbreak of hostilities, through the tense years preceding their final advent, anticipated tuberculosis as a grave menace and prepared accordingly. But in spite of forewarning and preparation, a rise in tuberculosis mortality appears already evident. Modern war is total war. Whole populations are engaged, through accelerated industry as well as actual combat.

The United States

In the present World War increasing effort is being made in the United States to avoid induction of soldiers with tuberculosis. Measures ensuring x-ray examination of practically all recruits admitted to the armed forces are in effect.

In the civilian population precautions are being taken against nutritional deficiency, since it is almost universally believed to have important bearing on the problem of resistance to tuberculosis. However, malnutrition may not be the gravest predisposing factor in a rise of tuberculosis. The acceleration of industry, leading to crowded quarters in industrial districts, brought about by the mass migration to industrial centers, has created another opportunity for widespread infection.

It is evident that a grave menace exists of another world-wide recrudescence of tuberculosis. Its prevention will require vigorous effort against the spread of infection and all measures possible to maintain a high level of resistance to disease.

Britain

To what extent the tubercle bacillus will repeat its former triumph of a generation ago in Britain cannot yet be properly gauged, but it has taken the initiative and the future course of events will be greatly determined by the effort put forward now by tuberculosis workers.

Deaths from respiratory tuberculosis increased about 6 per cent the first year of the war and 10 per cent the second, while the increase in deaths from other forms of tuberculosis was 2.4 per cent the first year and 17.6 per cent the second.

A considerable amount of infection is evidenced among the general population, particularly children, which means that either the infecting dose is large, or the resistance low. Both causes may have operated in the first half of 1941 when the nightly bombing of towns and cities made contact infection probable and frequent. However, if the increase is found to have continued since more normal conditions have prevailed, it will strengthen the idea that there has been a general lowered resistance to infection in children under five. Many factors can have contributed to the lowering of resistance in children among which are change in diet, nonpasteurized milk, blackout and shelter conditions and lack of sleep and rest.

Comparing the trend of events during the first three years of the last war and available figures for World War II, a definite similarity can be traced, although living conditions now are probably more conducive to the spread of tuberculosis. However, there are some marked differences. Tuberculous meningitis has increased sharply, whereas in the corresponding period of the last war it fell almost to the pre-war level. A further point of difference is the small variation between the male and female curves.

These are ominous signs which mean that infection is lurking in hidden places taking its toll,

(Continued on page xxviii)

The President's Page

In assuming the duties of President of the West Virginia State Medical Association, I am mindful of the many problems that confront our profession, and I pledge you my best efforts in furthering the interests of West Virginia and West Virginia physicians.

I congratulate the retiring President, Dr. R. O. Rogers, upon the splendid accomplishments of his administration. We are indeed fortunate in having him during the next year as Chairman of the Council and head of the Legislative Committee, for his experience and sound judgment will be of great help in meeting the problems of 1943.

Mr. Charles Lively, our efficient Executive Secretary, came to us at a time when the Association was called upon to handle the Procurement and Assignment Service. Notwithstanding the unprecedented volume of work and the fact that it was a new field of endeavor for him, his work has perhaps been unparalleled in medical society affairs. The Association is to be congratulated upon being able to secure the services of Charles Lively.

May I emphasize the importance of continuing regular meetings of the local societies. The West Virginia State Medical Association belongs to you and it is only through the medium of such meetings that an expression of your wishes can be made known. The members of the Scientific Work Committee have assumed the responsibility of furnishing speakers for these occasions, and I hope every society in the state will cooperate in this undertaking.

Governor Neely has manifested a keen interest in all humanitarian projects. In fact, he has assumed the leadership in many of these worthwhile undertakings that vitally affect the medical profession. I have in mind the following:

1. Cancer control.
2. Increased facilities for mental and tuberculosis cases.
3. A closer cooperation between the state and the profession in caring for indigent patients.
4. Providing a four-year course for medical students.
5. Sponsoring a course in Public Health at the University.

The Legislature will convene early this month and bills will be introduced dealing with many of these reforms. Your local legislative committee will be kept posted and it is urgently requested that you familiarize yourself with all bills that affect the medical profession, and use your influence with your local representatives.

Your cooperation will be most helpful. May we count on you?

R. Williamson

West Virginia Medical Journal

Official Journal of
The West Virginia State Medical Association
302 Atlas Bldg., Charleston, West Va.

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Published monthly on the first day of the month, at Charleston, by The West Virginia State Medical Association.

Original articles are accepted on condition that they are contributed exclusively to the Journal.

Advertising rates furnished upon request. All advertisements must conform to the standard established by the Council of Pharmacy and Chemistry of the American Medical Association.

Address all communications to Business Manager, West Virginia Medical Journal, Box 1031, Charleston, West Va. Phone, Capitol 34-625.

SUBSCRIPTION $3.50 PER YEAR

Entered as second-class matter, January 1, 1926. Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917. Authorized July 24, 1919.

A BIG JOB WELL DONE

During the past year, one of the most critical periods in the history of our country, problems of great magnitude and of the utmost importance have had to be met by the medical profession in this state. Fortunate indeed were we to have at the head of our Association a man who through it all has remained calm, refusing to be swayed by sentiment, but always fighting to uphold the best traditions of the profession. Dr. R. O. Rogers, of Bluefield, who has served as President during the Diamond Jubilee year of the West Virginia State Medical Association, has been on the job in deed and in truth. His advice has been widely sought, not only by those here at home but by others in various parts of the country who believe with him that the profession should be permitted to police itself, as in the past. As an administrator, no person could have done a better job, and the fruits of his labors will live through the years to come.

Working hand in hand with the various active committees, Dr. Rogers has guarded jealously the rights of the profession here in West Virginia. Having determined that legislation of vital importance was needed, he undertook to mold sentiment accordingly, and, as the year ended, a legislative program had been developed which, if adopted by the legislature, will do more to safeguard the health of the people and contribute more to

Dr. R. O. Rogers, Chairman of the Council

the control and cure of disease in West Virginia than has been possible as the result of legislation enacted at any previous session in the history of the state.

While Dr. Rogers is retiring from the presidency, the Association will continue to benefit from his counsel and advice. He succeeds Dr. Robert K. Buford as Chairman of the Council. In addition, he will serve as Chairman of the important Committee on Legislation.

Dr. Buford will succeed Dr. Frank F. Langfitt, of Clarksburg, as Member-at-Large on the Council, and will continue to serve as State Chairman of the P. & A. Committee.

To President Rogers, we extend thanks on behalf of the doctors of West Virginia, at home and abroad, for a big job well done.

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AGGRESSIVE LEADERSHIP ASSURED

To be President of the West Virginia State Medical Association is an honor that can come to a doctor but once in a lifetime. The Constitution provides that the President, after serving as Chairman of the Council for the year following his term of office, shall not be eligible for any elective office of the Association except delegate to the American

Dr. R. J. Wilkinson, President

Medical Association. Dr. Robert J. Wilkinson, of Huntington, assumes the presidency at a time when organized medicine should have in the high offices men who possess all the elements of leadership, men who know medicine and can appreciate the importance of making a fight to hold on to the things that are considered material and necessary to the very existence of the profession itself.

Doctor Wilkinson measures up to everything which should be looked for in the head of an organization such as the State Association. He is one of the outstanding surgeons of the country, successful in his practice from the very start. He is an administrator, one who understands the problems of medicine, large and small. He is a fighter and will work fearlessly and tirelessly for the principles which he believes essential to the needs of the doctors of America.

The new President takes over the first of the year, succeeding Dr. R. O. Rogers, of Bluefield, who becomes Chairman of the Council. The affairs of the Association have been in splendid hands for the past twelve months and we are assured of the same type of administration during the coming year. The new president will have solidly behind him the members of an organization which has been in existence for seventy-five years. This organization looks to him for aggressive leadership. They will not look in vain.

PEARL HARBOR NOT FORGOTTEN

When the year 1942 began, Pearl Harbor was in every mind, on every tongue. America was at war. Previously, *pour parlers* between Secretary Hull and the less than human Kurusu and Nomura had given us a false sense of security and well being. Christmas was approaching and our Army and Navy were being built up gradually as a matter of national defense. Then the blow fell.

For days, the whole country was in a state of shock. The Jap attack had a sobering effect upon our people, and by the first of the year, America was girding for war.

Now, at the beginning of 1943, with Pearl Harbor still fresh in our minds, we are waging and will continue to wage what we call total war. Germany and Japan have not yet felt the full force of our might, but before the year is out these two aggressor nations will find out that America has not forgotten the plot or the plotters.

AFTER A YEAR AT WAR

A year ago, a number of our doctors who held reserve commissions in the armed forces had been called to the colors. By May, over a hundred were in uniform. Then recruiting was stepped up the country over, and by late September West Virginia was over the top. A record compiled the middle of December

shows that we have supplied 110 doctors in excess of the quota fixed for the year 1942.

West Virginia doctors are now serving in the four corners of the earth. As the year ends, others who long ago filed applications for commissions are leaving and preparing to leave for active service. There is no doubt that the total number in the service will exceed 400 by early 1943.

Obituaries

DR. MICHAEL B. KELLY

Dr. Michael Bernard Kelly, formerly of Wheeling, died at his home in Charleston, December 11, 1942. Dr. Kelly was born in 1872, and graduated from the College of Physicians and Surgeons, Baltimore, in 1903. He limited his practice to eye, ear, nose and throat work and was located in Wheeling from the time of his licensure in 1906, until April of this year, when he retired and moved to Charleston.

Dr. Kelly was a member of the Ohio County Medical Society and the State Association, and was elected to honorary membership in 1939.

He was a member of the Knights of Columbus, the Wheeling Lodge No. 28, B. P. O. E., Elks; and, the American Society of Physicians and Surgeons.

Dr. Kelly is survived by two daughters, Miss Kathleen Kelly, Charleston; Mrs. Bernard Snedeker, Wheeling; two sons, Sgt. George M., Fort Sill, Okla., and Lieut. John B., Camp Forrest, Tenn.; and, three brothers, Jamse L., Edward, and John Kelly.

FIFTH CONGRESS ON INDUSTRIAL HEALTH

The Fifth Annual Congress on Industrial Health, sponsored by the Council on Industrial Health of the American Medical Association, will be held at the Palmer House, Chicago, January 11-13, 1943. The meetings are open to physicians and others interested in Industrial Health. There will be no registration fee.

NATIONAL CONFERENCE, MEDICAL SERVICE

The Seventeenth Annual Meeting of the National Conference on Medical Service will be held at the Palmer House, Chicago, February 15-16, 1943, in connection with the Congress on Medical Education and Licensure.

General News

BUONANNO CASE ENDED

In a decision handed down by the Supreme Court of Appeals of West Virginia December 8, 1942, the ruling of the Circuit Court of Kanawha County was affirmed in the case of the West Virginia State Medical Association v. The Public Health Council and Horatio Buonanno, a resident of Fairmont. The proceeding was instituted in March, 1942, for the purpose of restraining the Public Health Council from further considering Buonanno's application for reinstatement of his license. The restraining order was issued by Judge Julian F. Bouchelle and certified to the Supreme Court for review.

Buonanno was licensed to practice medicine on August 22, 1927. Evidence in support of the charge that his credentials were fraudulent was heard by the Public Health Council on April 8, 1930, and the members unanimously voted to revoke his license. Since that time, Buonanno has tried repeatedly to have his license reinstated. The last hearing was held at the meeting of the Council in November, 1941, at which time announcement was made that a final decision would be reached at the meeting to be held in March, 1942.

The Association took the position that since Buonanno did not appeal from the original order of revocation, the Council did not have power under the laws of West Virginia to reinstate his license. It was pointed out that, in the absence of a statutory provision permitting such action, the Council was without jurisdiction to take any further action in the case.

In affirming the ruling of the Circuit Court of Kanawha County, the Supreme Court held that,

"1. The Circuit Court of Kanawha County, under Section 3, Chapter 20, Acts of the Legislature, 1941, has jurisdiction of a proceeding in prohibition, to prevent the State Public Health Council from exceeding its lawful powers relating to the reinstatement of the license of a person to practice medicine and surgery.

"2. Where an order is entered by the Public Health Council, prior to enactment of Code of 1931, revoking the license of a person to practice medicine and surgery, from which no appeal was taken within thirty days

from the time it was entered, such order becomes final and reconsideration of its action by the Council for the purpose of reinstatement of the license may be restrained by a writ of prohibition."

As the result of the decision, the restraining order issued by Judge Bouchelle becomes permanent.

DOCTORS LICENSED IN WEST VIRGINIA

As a result of the meeting of the Public Health Council held at Charleston, October 26-28, 1942, the following physicians were licensed to practice in West Virginia: Drs. Samuel Emmanuel Bonnie, Charleston; James Telford Duncan, Charleston; Edward Watts Hickson, Monongah.

The following is a list of physicians licensed to practice by reciprocity:

Drs. Robert Hodges Ariail, Charleston; William Carroll Duffy, Baltimore, Md.; Gordon Glenn Fledman, Coalwood; Matthew Arthur Iatesta, Charleston; Hosea Dewain Ireland, Hopemont; Arthur Kasey Lampton, Gallagher; Lenore Patrick, Charleston; Irvine Saunders, Welch; Margaret Ida Stemple, Morgantown; Loyal Claude Wray, Omar.

NEW MEMBERSHIP ROSTER

The new roster of members of the West Virginia State Medical Association is printed in this issue of the JOURNAL. Every effort has been made to avoid errors in the compilation of the list, but the members are urged to check it over carefully so that any errors found might be reported promptly to the headquarters office of the West Virginia State Medical Association so that corrections may be made before the roster is printed in pamphlet form. The cooperation of all members of the Association in this undertaking will be appreciated.

DRS. VEST AND BLOSS RECOVERING

The many friends of Dr. Walter E. Vest, Editor of the JOURNAL and Dr. James R. Bloss, Editor Emeritus, will be glad to know that they are recovering satisfactorily from illness which has persisted over a period of several weeks.

Doctor Vest, who underwent an operation late in November, was discharged from the hospital shortly before Christmas. Doctor Bloss is permitted to be up and around his home in Huntington. Both physicians expect to return to active practice at an early date.

COMMITTEE SUPPORTS PROPOSED CANCER CONTROL LEGISLATION

The members of the Committee on Legislation of the West Virginia State Medical Association are prepared to support an ambitious program at the next session of the Legislature, which convenes January 13, 1943. The legislation proposed is a definite step forward. In the matter of Cancer Control, we especially have the opportunity to take our place in the front ranks of states which propose to contribute something substantial to the control and cure of this disease. Once established upon a firm foundation, there is every reason to believe that there will be an appreciable reduction in mortality rates.

An effort will be made to proceed with plans for the establishment of a four-year medical course at West Virginia University, the first two years of which will be given there, and the third and fourth years at some recognized school outside the state. Negotiations have about been completed with the Medical College of Virginia that will enable the state to have enrolled at that institution at least twenty medical students each year. This is a splendid step forward, and one that will mean much to the school of medicine at the University.

A final draft has been made of the Medical-Hospital Service Plan bill, prepared for introduction by the State Insurance Department. The principle has been endorsed by the West Virginia State Medical Association and the members of Council, and by the Hospital Association of West Virginia. The members of the committee have indorsed the bill as prepared for introduction in the Legislature.

Other matters of importance that are being given the careful consideration of the committee include the establishment of a course in Public Health in connection with the School of Medicine at West Virginia University; the transfer of the state institutions for the treatment of tuberculosis and mental diseases from the State Board of Control to the State Department of Health; and, the transfer of responsibility for the care of tuberculous persons from County Courts to some state department or bureau.

The Legislative Committee is composed of Dr. R. O. Rogers, Bluefield, Chairman; and, Drs. Frank V. Langfitt, Clarksburg, George F. Grisinger, Charleston, Ray M. Bobbitt, Huntington, and George P. Evans, Iaeger.

NEW X-RAY AND LABORATORY FEE SCHEDULE IN EFFECT

An important change in the rules and regulations governing the handling of x-rays and the payment of x-ray and laboratory fees by the Workmen's Compensation Commission has been announced by Commissioner C. L. Heaberlin, effective January 1, 1943.

The new regulations provide that x-rays made by hospitals and physicians in connection with the treatment of compensable injuries must be labeled so as to show the date the film is made, the claim number, name of the claimant, and the name of the employer, and must be retained in the files of the hospital or the doctor making the same for a period of five years from the date of the injury. They are to be furnished to the Compensation Commissioner upon written request.

Instead of mailing the x-ray films to the Commission, the doctor in charge of the case will now submit a full written report in triplicate, together with the fee bill on which x-ray charges are made.

X-rays will be limited to three for one injured part, and if additional x-rays are necessary, the work must be authorized by the Commissioner and they will be paid for at one-half the regular fee rate.

The new schedule for blood transfusions provides a flat rate of $25.00 for the first transfusion and $15.00 for all subsequent transfusions.

A flat fee of $7.50 will be paid for operating room. Heretofore the fee has been $10 for major and $5 for minor operations. A flat rate of $7.50 will be paid for anesthesia.

Laboratory fees will be paid as follows: Routine laboratory work, consisting of urinalysis, Kahn or Wassermann, $3.00. Other laboratory work must not exceed $5.00 except upon the written authorization of the Commissioner. Administration of prophylactic doses of tetanus antitoxin, $2.50, and $5.00 for prophylactic dose of combined gas and tetanus antitoxin.

The complete schedule of payment for x-rays is as follows:

Abdomen	$10.00
Ankle	5.00
Arm	7.50
Chest: Flat	10.00
Stereo	12.50
Clavicle	10.00
Eye	10.00
Localization Foreign Body	12.50
Elbow	7.50
Finger	5.00
Foot	7.50
Forearm	7.50
Hand	7.50
Head	12.50
Hip	10.00
Intravenous Pyelogram	20.00
Jaws: One Side	10.00
Both Sides	12.50
Kidneys	10.00
Knee	10.00
Leg	10.00
Pelvis: Flat	10.00
Stereo	12.50
Shoulder	10.00
Spine: One Section	10.00
Each Additional Section	7.50
Teeth: Single	2.00
Full Set	10.00
Toe	5.00
Wrist	7.50

P. & A. BULLETIN

In a communication received from Dr. Frank H. Lahey, Chairman of the Directing Board of the State Procurement and Assignment Service, the JOURNAL is requested to publish the following statement:

> "It is of the utmost importance that the Procurement and Assignment Service for Physicians, Dentists, and Veterinarians, immediately has the name of any doctor who really is willing to be dislocated for service, either in industry or in overpopulated areas, and who has not been declared essential to his present locality. This is necessary if the medical profession is to be able to meet these needs adequately and promptly. We urgently request that any physician over the age of 45 who wishes to participate in the war effort send in his name to the State Chairman for the Procurement and Assignment Service in his State."

DR. LEROY A. WILKES

Dr. LeRoy A. Wilkes, Executive Officer of the New Jersey Medical Society and Acting Editor of the New Jersey Medical Journal, died suddenly on November 29th, at his home in Trenton.

WEST VIRGINIA STATE MEDICAL ASSOCIATION

ROSTER OF MEMBERS BY SOCIETIES

(January 1, 1943)

BARBOUR-RANDOLPH-TUCKER

Ashworth, Glenn ..... Philippi
Bolton, H. H. ..... Thomas
*Bosworth, J. L. ..... Mill Creek
Butt, A. P. ..... Elkins
†Chenoweth, P. C. ..... Elkins
†Condry, R. J. ..... Elkins
†Conrad, H. A. ..... Elkins
†Euphrat, Edwin J. ..... Elkins
Golden, B. I. ..... Elkins
Goodwin, T. M. ..... Elkins
Gray, P. L. ..... Elkins
Hall, C. H. ..... Elkins
*Hamilton, E. M. ..... Belington
Harper, W. G. ..... Elkins
Jeffries, E. M. ..... Philippi
†King, L. S. ..... Philippi
Levy, Fritz ..... Elkins
Liggett, B. L. ..... Mill Creek
†Main, Emory H. ..... Philippi
†Martin, Joseph E. ..... Elkins
Maxwell, M. H. ..... Elkins
Michael, G. H. ..... Belington
Miller, J. L. ..... Thomas
Montoney, Decatur ..... Elkins
Moore, S. G. ..... Elkins
†Murphy, Franklin B. ..... Philippi
†Myers, E. E. ..... Philippi
Myers H C. ..... Philippi
†Myers, Junior ..... Philippi
Myers, K. J. ..... Philippi
*Owens, H. K. ..... Elkins
†Roberts, Donald R. ..... Elkins
Skar, S. J. ..... Davis
Smith, W. S. ..... Philippi
Stroud, C. G. ..... Brownton
†Weisman, S. ..... Parsons
Whiteside, W. E. ..... Parsons
Woodford, J. R. ..... Philippi
†Woodford, T. L. ..... Belington
Wright, O. E. ..... Galloway

BOONE

Aliff, Paul ..... Nellis
†Ballard, O. D. ..... Van
Barbour, W. L. ..... Whitesville
Calfee, W. R. ..... Whitesville
Caylor, L. G. ..... Highcoal
Glover, A. E. ..... Madison
Harless, W. F. ..... Madison
Hunter, R. L. ..... Madison
Lewis, A. C. ..... Seth
Pauley, D. F. ..... Jeffrey
Prather, F. G. ..... Wharton

BROOKE

†Booher, W. T. ..... Wellsburg
†Hegner, H. L. ..... Wellsburg
†Jacob, S. S. ..... Bethany
Matson, F. L. ..... Wellsburg
McGraw, Ralph ..... Follansbee
McMullen, J. P. ..... Wellsburg
Otte, R. C. ..... Wellsburg

† In Military Service.
* Honorary Member.

CABELL

Baber, J. H. ..... Huntington
Ball, Evelyn ..... Huntington
†Barker, J. F. ..... Huntington
†Beard, H. E. ..... Huntington
Beckner, W. F. ..... Huntington
Biern, O. B. ..... Huntington
Blackwelder, R. G. ..... Huntington
Bloss, J. R. ..... Huntington
Bobbitt, R. M. ..... Huntington
†Boso, Clarence H. ..... Huntington
Bourn, W. D. ..... Barboursville
Brandabur, J. J. ..... Huntington
Brown, B. F. ..... Huntington
Brown, F. A. ..... Huntington
†Brown, J. R. ..... Huntington
*Bruns, W. F. ..... Ceredo
†Calvert, R. L. ..... Chelyan
†Carter, E. Norval ..... Huntington
Chambers, V. L. ..... Huntington
Christian, Leo ..... Huntington
†Claiborne, W. L. ..... Huntington
†Coffey, F. L. ..... Huntington
†Cook, J. R. ..... Huntington
†Coplin, Robt. W. ..... Huntington
*Crews, A. W. ..... Huntington
Cronin, D. J. ..... Huntington
Curry, R. H. ..... Barboursville
†Daniels, W. F. ..... Huntington
Dodson, Ross ..... Huntington
†Duncan, C. S. ..... Huntington
Farnsworth, F. F. ..... Milton
Ferguson, J. W. ..... Kenova
Folsom, T. G. ..... Huntington
Ford, C. P. S. ..... Huntington
†Ford, J. C. ..... Huntington
†Gang, L. B. ..... Huntington
†Garred, E. W. ..... Milton
Garrett, B. D. ..... Kenova
Genge, Cole D. ..... Huntington
Gerlach, E. B. ..... Huntington
Gibson, A. P. ..... Huntington
Grimm, W. O. ..... Huntington
Guthrie, J. A. ..... Huntington
Hamilton, O. L. ..... Huntington
Hardman, J. C. ..... Huntington
Hardwick, R. ..... Huntington
Harwood, I. R. ..... Huntington
Hatfield, H. D. ..... Huntington
Hawes, C. M. ..... Huntington
Hayman, Douglas ..... Huntington
Hayman, J. S. ..... Huntington
*Hereford, W. D. ..... Huntington
*Hicks, I. C. ..... Huntington
Hines, N. F. ..... Huntington
Hirschman, I. I. ..... Huntington
Hodges, F. C. ..... Huntington
Hoffman, C. A. ..... Huntington
Hoitash, F. J. ..... Huntington
Hubbard, J. E. ..... Huntington
Humphrey, E. J. ..... Huntington
†Hunter, W. B. ..... Huntington
Hutchison, J. L. ..... Huntington
Irmen, F. A. ..... Huntington
Jaskiewicz, C. F. ..... Huntington
Johnson, G. D. ..... Huntington
Jones, A. S. ..... Huntington
Kappes, W. C. ..... Huntington
Kessler, A. D. ..... Huntington
*Kessler, A. K. ..... Huntington
Ketchum, Dorsey ..... Huntington
†Klumpp, J. S. ..... Huntington
Lusher, H. V. ..... Huntington
†Lyon, G. M. ..... Huntington
*MacKenzie, A. R. ..... Huntington
Marple, F. O. ..... Huntington
†Martin, W. B. ..... Huntington
McClellan, G. O. ..... West Hamlin
†Meek, E. M. ..... Huntington
Moore, Hallock ..... Huntington
Moore, L. J. ..... Huntington
Moore, M. B. ..... Huntington
Moore, T. W. ..... Huntington
Morrison, G. C. ..... Huntington
†Muller, H. E. ..... Huntington
Neal, W. E. ..... Huntington
†Neal, W. L. ..... Huntington
Parsons, W. J. ..... Huntington
Plymale, Clarence ..... Huntington
Porter, W. J. ..... Wayne
Rardin, W. H. ..... Huntington
Ratcliff, G. A. ..... Huntington
Reaser, E. F. ..... Huntington
Reynolds, C. O. ..... Huntington
Reynolds, Otis E. ..... Huntington
Richmond, L. C. ..... Milton
Rife, J. W. ..... Kenova
Rowley, W. N. ..... Huntington
Rutherford, A. G. ..... Huntington
Schuller, F. X. ..... Huntington
†Scott, F. A. ..... Huntington
Shafer, E. E. ..... Huntington
Silver, Harry ..... Milton
Sloan, R. M. ..... Huntington
Steenbergen, J. H. ..... Huntington
Stevens, Richard ..... Huntington
Stotts, Roscoe ..... Kenova
†Strange, W. W. ..... Huntington
Swann, W. C. ..... Huntington
Taylor, C. T. ..... Huntington
†Taylor, Ewen ..... Huntington
Taylor, I. W. ..... Huntington
Van Metre, R. S. ..... Huntington
Vest, W. E. ..... Huntington
Walden, G. W. ..... West Hamlin
†Weinstein, Stanley ..... Huntington
Wilkinson, R. J. ..... Huntington
Willis, C. A. ..... Huntington
Willis, C. G. ..... Huntington
Wright, C. B. ..... Huntington
Wylie, R. M. ..... Huntington

CENTRAL WEST VIRGINIA

*Allen, S. P. ..... Webster Springs
†Bowyer, A. B. ..... Elkview
Brown, E. S. ..... Summersville
Brown, F. H. ..... Summersville
Brown, H. S. ..... Sutton
Carson, C. C. ..... Gassaway
Cofer, J. M. ..... Bergoo
Cutright, R. G. ..... Buckhannon
Deeds, L. W. ..... Buckhannon
Dodrill, J. B. ..... Webster Springs
*Dunn, Hugh ..... Richwood
Eakle, J. C. ..... Sutton
Eakle, O. O. ..... Sutton

†Echols, J. E. . . . . Richwood
Echols, W. E. . . . . Richwood
†Ferrell, R. M. . . . . Webster Springs
Fisher, E. L. . . . . Gassaway
Forman, Worth . . . . . Buckhannon
Gum, W. H. . . . . Buckhannon
†Hartman, I. F. . . . . Buckhannon
Hill, G. D. . . . . Tioga
Hill, L. O. . . . . Camden-on-Gauley
†Huffman, J. C. . . . . Buckhannon
Hunter, E. H. . . . . Webster Springs
*McCauley, W. H. . . . . Sutton
†McClung, James E. . . . . Richwood
McClung, James . . . . . Richwood
†McClung, W. D. . . . . Richwood
Morrison, M. T. . . . . Sutton
Nelson, William . . . . . Richwood
Page, B. L. . . . . Buckhannon
Peters, D. C. . . . . Richwood
Rusmisell, J. A. . . . . Buckhannon
Van Tromp, H. O. . . . . French Creek
*Walker, Everett . . . . . Barboursville

DODDRIDGE

Harper, F. G. . . . . West Union
Poole, A. . . . . West Union
White, R. S. . . . . West Union

EASTERN PANHANDLE

†Armentrout, A. W. . . . . Martinsburg
Bitner, E. H. . . . . Martinsburg
Clapham, R. E. . . . . Martinsburg
DuPuy, Charles . . . . . Martinsburg
Dupuy, H. R. . . . . Martinsburg
Eagle, A. B. . . . . Martinsburg
†Fox, M. R. . . . . Charles Town
†Glenn, Marshall . . . . . Charles Town
Glover, V. L. . . . . Martinsburg
Guthrie, J. K. . . . . Martinsburg
†Haltom, W. L. . . . . Martinsburg
Helms, J. C. . . . . Hedgesville
Hendrix, N. B. . . . . Martinsburg
Hodges, John . . . . . Martinsburg
Johnson, C. C. . . . . Harpers Ferry
Link, Vaughn . . . . . Shepherdstown
Martin, G. O. . . . . Martinsburg
McFetridge, Elizabeth . . . . Shepherdstown
Morison, G. P. . . . . Charles Town
Oates, Max . . . . . Martinsburg
Oates, T. K. . . . . Martinsburg
†Porterfield, M. H. . . . . Martinsburg
Power, C. G. . . . . Martinsburg
†Shaw, D. J. . . . . Berkeley Springs
Talbott, R. B. . . . . Martinsburg
Tonkin, H. G. . . . . Martinsburg
Van Metre, J. L. . . . . Charles Town
Wallace, W. A. . . . . Martinsburg
Wanger, Halvard . . . . . Shepherdstown
†Warden, W. P. . . . . Charles Town
Waters, Z. J. . . . . Baltimore, (Md.)

FAYETTE

Bays, A. E. . . . . Montgomery
†Becker, Philip L. . . . . Kimberly
Bilger, F. W. . . . . McComas
Bittinger, W. P. . . . . Summerlee
Brugh, B. F. . . . . Montgomery
Bundy, W. E. . . . . Minden
†Butterfield, D. L. . . . . Milburn

† In Military Service.
* Honorary Member.

†Cardey, N. L. . . . . Winona
Carter, Eugene S., Jr. . . . . Boomer
†Crank, G. O. . . . . Lawton
Dalbey, Geo. M. . . . . Chariton, (Iowa)
Daniel, Gilbert . . . . . Alloy
Daugherty, T. B. . . . . Fayetteville
Davis, W. B. . . . . Rainelle
†Dickerson, L. A. . . . . Fayetteville
Englefried, C. H. . . . . Montgomery
†Feldman, John L. . . . . Longacre
Fleger, C. A. . . . . Ansted
Frazier, Claude . . . . . Winona
†Friedman, Norman . . . . . Longacre
Harless, L. R. . . . . Gauley Bridge
*Henderson, O. J. . . . . Montgomery
Higginbotham, Upshur . . . . . Montgomery
Hodges, G. G. . . . . Mt. Hope
Hogshead, Ralph . . . . . Mammoth
†Hresan, M. G. . . . . Minden
Jackson, C. F. . . . . Bradshaw
Jackson, H. M. . . . . Fayetteville
Jarrett, J. N. . . . . Oak Hill
†Jones, E. E., Jr. . . . . Mount Hope
King, W. E. . . . . Montgomery
Laird, T. K. . . . . Montgomery
Laird, W. R. . . . . Montgomery
†Lamb, R. M. . . . . Winona
Martin, H. C. . . . . Rainelle
McGehee, M. W. . . . . Montgomery
Merriam, C. G. . . . . Page
Moore, M. A. . . . . Longacre
Moser, L. A. . . . . Minden
†Nolan, L. E. . . . . Montgomery
†Nutter, E. V. . . . . Gauley Bridge
Peck, R. S. . . . . Cannelton
†Peskoe, L. Y. . . . . Boomer
Pope, Thos. B. . . . . Kingston
Prillaman, P. E. . . . . Scarbro
Puckett, B. F. . . . . Oak Hill
Reeves, J. N. . . . . Oak Hill
Roark, J. L. . . . . Powellton
*Shaffer, J. S. . . . . Montgomery
*Shirkey, D. W. . . . . Montgomery
Skaggs, H. C. . . . . Montgomery
Smith, G. A. . . . . Montgomery
Staliard, C. W. . . . . Montgomery
Thompson, E. B. . . . . Montgomery
Thompson, J. B. . . . . Oak Hill
†Updike, R. A. . . . . Montgomery
Watkins, C. E. . . . . Harvey

GREENBRIER VALLEY

Argabrite, O. P. . . . . Alderson
†Caldwell, Geo. M. White Sulphur Springs
Cecil, R. C. . . . . Rainelle
Compton, J. W. . . . . Ronceverte
Crawley, J. R. . . . . Anjean
Duncan, Herbert . . . . . Lewisburg
Ferrell, A. D. . . . . Ronceverte
Goodman, H. L. . . . . Ronceverte
Gunning, H. D. . . . . Ronceverte
Hamrick, K. J. . . . . Marlinton
*Hinsdale, Guy . . . . . Lewisburg
Jackson, C. C. . . . . East Rainelle
*Kirkpatrick H. L. White Sulphur Springs
Lanham, A. G. . . . . Ronceverte
Leech, J. G. . . . . Quinwood
Lemon, C. W. . . . . Lewisburg
Mahood, C. F. . . . . Alderson
†Mamick, Stephen . White Sulphur Springs
Matney, T. G. . . . . Lindside
†McCauley, E. W. . . . . Rainelle

McClintic, C. F. . . . . Williamsburg
McFerrin, S. A. . . . . Renick
Mitchell, D. W. . . . . Ronceverte
Myles, W. E. . . . . White Sulphur Springs
Preston, D. G. . . . . Lewisburg
Price, N. R. . . . . Marlinton
Todd, L. B. . . . . Quinwood
Von Bose, Edda . . . . . New Orleans (La.)
Wall, C. I . . . . . Rainelle
Williams, L. . . . . Beelick Knob

HANCOCK

†Beaumont, G. L. . . . . New Cumberland
Bogarad, M. . . . . Weirton
†Brand, J. M. . . . . Chester
†Bruce, T. H. . . . . New Cumberland
Fisher, J. E. . . . . New Cumberland
Focer, R. L. . . . . Weirton
†McNinch, E. R. . . . . Weirton
†Moore, B. J. . . . . Chester
†Polen, F. E. . . . . Hollidays Cove
Powers, M. H. . . . . Weirton
†Prioletti, V. . . . . Weirton
Richmond, J. E. . . . . Weirton
Rigas, George . . . . . Weirton
Rinehart, A. B. . . . . Weirton
Schwartz, L. O. . . . . Weirton
Slate, T. A. . . . . Hollidays Cove
Thompson, J. L. . . . . Weirton
Whitaker, L. A. . . . . Weirton
Wolpert, Milton . . . . . Chester
†Yurko, Anthony . . . . . Hollidays Cove

HARRISON

†Allman, W. H. . . . . Clarksburg
*Brake, B. S. . . . . Clarksburg
Brannon, E. H. . . . . Bridgeport
Brennan, J. T. . . . . Clarksburg
Carder, J. R. . . . . Clarksburg
Chandler, F. C. . . . . Bridgeport
Coffindaffer, R. S. . . . . Shinnston
Davis, Edward . . . . . Salem
Davis, W. M. . . . . Bridgeport
Esker, H. H. . . . . Clarksburg
†Evans, G. F. . . . . Clarksburg
†Ferrell, Marcus E. . . . . Clarksburg
†Fisher, C. F. . . . . Clarksburg
Flowers, Earl N. . . . . Clarksburg
*Flowers, Edward Newton . . . . Clarksburg
*Folk, John . . . . . Bridgeport
†Genin, F. G. . . . . Clarksburg
†Gilman, Joseph . . . . . Clarksburg
Gocke, Thomas . . . . . Clarksburg
Gocke, W. T. . . . . Clarksburg
†Golz, H. H. . . . . Clarksburg
Grant, Sylvia . . . . . Bridgeport
Greer, C. C. . . . . Clarksburg
†Hall, S. S. . . . . Clarksburg
Hanifan, R. K. . . . . Clarksburg
Harris, T. G. . . . . West Milford
Haynes, H. H. . . . . Clarksburg
†Hess, D. S. . . . . Shinnston
*Hill, E. A. . . . . Clarksburg
Hodge, Ben E. . . . . Clarksburg
*Hood, T. M. . . . . Clarksburg
†Humphries, R. T. . . . . Clarksburg
Jackson, Kenna . . . . . Clarksburg
Jarvis, C. C. . . . . Clarksburg
Kelley, A. O. . . . . Wallace
Kemper, A. J. . . . . Lost Creek
Kerr, John C. . . . . Clarksburg
Ladwig, O. W. . . . . Wilsonburg
Langfitt, F. V. . . . . Clarksburg

Lembright, J. F. ... Clarksburg
Linger, R. B. ... Clarksburg
Lough, D. H. ... Clarksburg
Lynch, R. V. ... Meadowbrook
Maloy, J. S. ... Shinnston
Matheny, B. F. ... Clarksburg
†McCuskey, John F ... Clarksburg
McGuire, J. P. ... Clarksburg
Mills, L. H. ... Clarksburg
Nathanson, Leon ... Lumberport
Neal, L. E. ... Clarksburg
†Nutter, R. B., Jr. ... Lumberport
Nutter, R. J. ... Clarksburg
*Ogden, C. R. ... Clarksburg
Osborn, R. L. ... Clarksburg
Owens, W. T. ... Clarksburg
Page, J. E. ... Clarksburg
*Pendleton, E. ... Clarksburg
Pletcher, R. O. ... Lost Creek
Post, A. T. ... Clarksburg
Post, C. O. ... Clarksburg
Post, S. H. ... Volga
†Ralston, James ... Clarksburg
Repass, James ... Lumberport
†Riheldaffer, Wm. ... Romney
*Riley, R. M. ... Nutter Fort
Rose, George W. ... Salem
Slater, C. N. ... Clarksburg
Sloan, H. E. ... Clarksburg
Spelsburg, W. W. ... Clarksburg
Stephenson, J. E. ... Clarksburg
Strother, W. L. ... Salem
Thomas, H. V. ... Clarksburg
Tucker, E. D. ... Nutter Fort
Waddell, R. L. ... Shinnston
†Weaver, Andrew J. ... Clarksburg
*Wehner, E. F. ... Clarksburg
Whisler, H. A. ... Clarksburg
Wilkinson, B. W. ... Clarksburg
Williams, J. F., Jr. ... Clarksburg
Wilson, J. E. ... Clarksburg
†Wornal, L. S. ... Shinnston
Wright, E. B. ... Clarksburg
Wright, W. B. ... Clarksburg
†Zinn, L. D. ... Clarksburg

KANAWHA

Albrecht, M. ... Charleston
Amick, A. E. ... Charleston
Amick, A. L. ... Charleston
*Anderson, Maury ... Dunbar
Anderson, R. L. ... Charleston
Angell, H. W. ... Charleston
Angstadt, N. G. ... Charleston
†Ashman, H. ... Gallagher
Baer, R. E. ... South Charleston
Bailey, H. A. ... Charleston
Bailey, R. W. ... Hurricane
†Baldock, H. E. ... Charleston
Ball, Ernest ... Charleston
Banks, J. Bankhead ... Charleston
Barber, D. N. ... Charleston
Barber, T. M. ... Charleston
†Basman, Jack ... Charleston
Baum, Henry ... Charleston
Beddow, H. M. ... Charleston
†Bivens, S. L. ... Charleston
Black, W. P. ... Charleston
Blagg, B. V. ... South Charleston
Blake, T. H. ... St. Albans
Bobbitt, O. H. ... Charleston

† In Military Service.
* Honorary Member.

†Boiarsky, Julius ... Charleston
Bonar, M. L. ... Charleston
†Bradford, Bert, Jr. ... Charleston
Brady, A. S., Jr. ... Charleston
†Brick, John P. ... Charleston
Brown, H. M. ... Charleston
Brown, R. J. ... Charleston
Buff, I. E. ... Charleston
Buford, R. K. ... Charleston
Bull, S. W. ... Charleston
Burdette, Rex A. ... Charleston
Cannaday, J. E. ... Charleston
Capito, G. B. ... Charleston
Carlson, F. B. ... Charleston
*Casto, T. J. ... Charleston
Champe, Preston ... Charleston
†Chandler, A. C. ... Charleston
†Churchman, V. T. ... Charleston
Clark, F. A. ... Charleston
†Cooke, W. L. ... Charleston
*Copeland, C. E. ... Charleston
Cox, L. E. ... Charleston
Crosson, J. W. ... Charleston
Davis, E. A. ... Charleston
†Dawson, R. O. ... Charleston
DeBell, A. W. ... Malden
Dent, D. A. ... Charleston
Duling, M. S. ... Charleston
Dunlap, J. L. ... Nitro
Dunn, R. H. ... South Charleston
†Eckmann, Leonard ... South Charleston
Elkin, W. P. ... Charleston
Erwin, F. L. ... Burnwell
†Escue, H. M. ... Charleston
Fisher, H. H. ... Dunbar
Fleshman, C. M. ... Clendenin
Frame, R. I. ... Sharples
Frank, Ludwig ... Charleston
Frazier, J. W. ... Charleston
Gerhardt, P. R. ... Charleston
Given, A. J. ... Rensford
Glass, H. R. ... Charleston
Glass, W. J. ... Sissonville
†Glassman, Dan ... Charleston
†Godbey, J. R. ... Charleston
Gordon, A. T. ... Spencer
Gott, Fred ... Charleston
†Grace, J. E. ... Cabin Creek
Grisinger, G. F. ... Charleston
†Groves, Owen A. ... Charleston
†Hager, J. L. ... Charleston
†Haley, John B. ... Charleston
†Haley, P. A., II ... Charleston
Halloran, R. O. ... Charleston
Hamrick, R. E. ... Charleston
Hamrick, R. S. ... St. Albans
Hansford, J. H. ... Pratt
Hardesty, W. L. ... Charleston
Harper, C. A. ... Clendenin
Harper, O. M. ... Clendenin
†Hash, J. W. ... Charleston
Hayes, E. R. ... Chelyan
Heffner, G. P. ... Charleston
Henson, E. B. ... Charleston
†Hills, H. M., Jr. ... Charleston
Hoffman, W. E. ... Charleston
Hoke, L. I. ... Nitro
Holcombe, V. E. ... Charleston
†Houck, C. L. ... Carbon
Houck, M. R. ... Carbon
Howell, H. H. ... Madison
Hudgins, A. P. ... Charleston
Hunter, J. Ross ... Charleston
Hutchinson, T. H. ... Malden
Ireland, R. A. ... Charleston

Irwin, G. G. ... Charleston
Jabaut, S. W. ... South Charleston
†Jarrell, C. A. ... Belle
Jarrett, L. A. ... Dunbar
†Jones, Ralph J. ... Charleston
†Jordan, E. V. ... Charleston
†Kaufman, J. R. ... Charleston
Kessel, C. R. ... Ripley
†Kessel, Ray ... Charleston
†Kessel, Russell ... Charleston
Ketchum, R. D. ... Charleston
Lance, V. L. ... Charleston
†Laslie, J. C. ... Charleston
Law, H. D. ... Charleston
†Lewis, C. E. ... Charleston
†Lilly, Goff P. ... Charleston
Lilly, J. P. ... Charleston
Litton, A. C. ... Charleston
Litsinger, E. A. ... Charleston
Louft, R. R. ... Charleston
†Lutz, John ... Charleston
Mace, V. E. ... Charleston
MacNamara, R. J. ... Charleston
†Mantz, T. Paul ... Charleston
†Marquis, J. N. ... Charleston
Marshall, C. B. ... Nitro
†Matthews, L. B. ... Charleston
McClue, A. E. ... Dunbar
McClure, U. G. ... Charleston
McLaughlin, Ralph ... Charleston
McMillan, W. A. ... Charleston
McMillan, W. O. ... Charleston
McPherson, H. D. ... Eskdale
Mendeloff, M. I. ... Charleston
Mican, H. M. ... Charleston
Milhoan, A. W. ... Nitro
Morison, O. N. ... Charleston
Mynes, L. H. ... Charleston
Nale, T. W. ... Charleston
†Newhouse, N. H. ... Charleston
Niedermyer, J. W. ... Charleston
Owen, E. W. ... Spencer
†Palmer, G. F. ... Charleston
Patrick, Lenore ... Charleston
Pence, R. E. ... South Charleston
†Peters, J. T. ... South Charleston
†Peterson, V. L. ... Charleston
Point, W. W. ... Charleston
†Pollock, B. H. ... Charleston
†Polsue, W. C. ... Charleston
Powell, C. W. ... Charleston
Preiser, Phillip ... Charleston
†Press, Edward ... Charleston
*Preston, B. S. ... Charleston
Price, A. M. ... Charleston
Price, R. B. ... Charleston
†Pushkin, Willard ... Charleston
Putschar, W. J. G. ... Charleston
Reed, T. G. ... Charleston
Reel, F. C. ... Charleston
Revercomb, P. H. ... Charleston
Ritter, H. H. ... Charleston
Robertson, G. C. ... Charleston
Robertson, H. L. ... Charleston
*Robertson, W. B. ... Kearneysville
Robertson, W. S. ... Charleston
Robinson, J. H. ... Charleston
Rohr, J. U. ... Charleston
Rucker, J. E. ... Charleston
*Schoolfield, G. C. ... Charleston
Scott, C N. ... Nitro
Seletz, Abraham ... Charleston
†Selman, J. H. ... Charleston
†Shamblen Earle ... Charleston
Shawkey, A. A. ... Charleston

†Shepherd, E. M. . . . . Charleston
Shepherd, W. S. . . . . Charleston
Shirkey, W. F. . . . . Charleston
Skaggs, J. S. . . . . Montcoal
Skaggs, J. W. . . . . Nitro
Smith, A. A. . . . . Clay
Smith, B. A. . . . . Spencer
†Smith, C. B. . . . . Charleston
Smith, J. A. . . . . South Charleston
Souleyret, S. B. . . . . Coalburg
†Soulsby, P. C. . . . . Pratt
Squire, E. W. . . . . Charleston
†Staats, Charles . . . . . Charleston
*Staats, H. H. . . . . Charleston
Stewart, W. C. . . . . Charleston
†Strickland, L. N. . . . . Widen
Stork, A. R. . . . . Charleston
Swart, H. A. . . . . Charleston
Swint, B. H. . . . . Charleston
†Thomas, W. C. . . . . Charleston
Thompson, H. G. . . . . Charleston
†Thornhill, W. A., Jr. . . . . Charleston
†Tuckwiller, P. A. . . . . Charleston
Vaughan, E. O. . . . . St. Albans
†Ward, Harold W. . . . . Sutton
Webb, R. L. . . . . Charleston
Whiteside, C. T. . . . . Kayford
Wilkerson, W. V. . . . . Prenter
Wilson, A. A. . . . . Charleston
Wilson, W. B. . . . . Charleston
*Wilson, W. H. . . . . St. Albans
Woodall, R. E. . . . . Charleston
Work, W. F. . . . . Charleston

LEWIS

Andrew, H. M. . . . . Weston
Burton, G. M. . . . . Weston
Burton, S. H. . . . . Weston
Cooper, E. R. . . . . Weston
Corder, G. C. . . . . Jane Lew
Davisson, C. R. . . . . Baltimore, (Md.)
Fisher, R. M. . . . . Weston
*Hall, E. T. W. . . . . Weston
*Hudkins, O. L. . . . . Weston
*Kessler, D. P. . . . . Weston
King, W. P. . . . . Weston
Lawson, A. F. . . . . Weston
Long, A. E. . . . . Weston
Offner, J. E. . . . . Weston
Rohr, C. B. . . . . Alum Bridge
Smith, W. T. . . . . Glenville
Snaith, Theresa . . . . . Weston
Snyder, George . . . . . Weston
Stalnaker, Guy . . . . . Glenville
Trinkle, E. A. . . . . Weston

LOGAN

Altizer, A. E. . . . . Accoville
*Aultz, L. L. . . . . Ward
†Bonar, Robert R. . . . . Whitman
†Bond, Dewitt T. . . . . Amherstdale
Bond, E. M. . . . . Amherstdale
†Brammer, F. E. . . . . Dehue
Brewer, W. E. . . . . Logan
Brown, C. Leonard . . . . . Holden
Carney, J. W. . . . . Logan
Combes, L. G. . . . . Holden
Davis, C. A. . . . . Logan
Deason, V. A. . . . . Logan
Farley, H. H. . . . . Logan

† In Military Service.
* Honorary Member.

†French, A. M. . . . . Logan
Hamilton, W. P. . . . . Logan
*Hill, J. O. . . . . Huntington
Hively, H. D. . . . . Ward
Jamison, Frank . . . . . Dehue
Klausman, Wm. A. . . . . Holden
†Kruger, I. M. . . . . Logan
Lawson, L. W. . . . . Logan
*Lawson, S. B. . . . . Logan
†Layman, L. H. . . . . Holden
Lyons, J. W. . . . . Holden
Matthews, W. E. . . . . Logan
McClellan, W. T. . . . . Ethel
Millman, T. H. . . . . Earling
Moore, D. T. . . . . Parkersburg
Nefflen, L. H. . . . . Holden
†Nelson, E. R. . . . . Logan
Parker, W. H. . . . . Braeholm
Patterson, J. L. . . . . Holden
Peck, Earl M. . . . . Charleston
Poling, Owen . . . . . Point Pleasant
Quaintance, R. W. . . . . Lundale
Roberts, R. W. . . . . Man
*Round, F. L. . . . . Holden
Rowan, W. S. . . . . Logan
Rubisoff, Reuben . . . . . Logan
Scheinberg, Louis . . . . . Emmett
Scott, Robert K. . . . . Lorado
Smith, B. D. . . . . Omar
Smith, T. C. . . . . Slagle
†Starcher, E. H. . . . . Earling
Steele, L. E. . . . . Logan
Stumbo, J. A. . . . . Logan
Sutphin, Mark . . . . . Logan
Taylor, W. B. . . . . Ethel
Thornbury, J. W. . . . . Man
Traul, J. B. . . . . Chapmanville
Traul, R. E. . . . . Logan
Van Hoose, Harold . . . . . Mallory
Vaughn, R. R. . . . . MacBeth

MARION

Baron, L. E. . . . . Mannington
Barr, J. M. . . . . Worthington
†Blanton, J. L. . . . . Fairmont
Bonnar, James M. . . . . Fairmont
*Brownfield, G. H. . . . . Fairmont
Carter, C. J. . . . . Fairmont
Causey, H. D. . . . . Fairmont
Clinton, J. B. . . . . Fairmont
Collins, J. C. . . . . Fairmont
Criss, H. L. . . . . Fairmont
Davis, J. W. . . . . Fairmont
†Evans, Geo. T. . . . . Fairmont
†Fleming, H. C. . . . . Fairmont
†Frye, R. R. . . . . Mannington
Hamilton, D. D. . . . . Mannington
Helmick, J. P. . . . . Fairmont
Holland, C. L. . . . . Fairmont
Holland, E. A. . . . . Fairmont
Jenkins, J. J. . . . . Farmington
*Johnson, H. R. . . . . Fairmont
†Johnson, Phillip . . . . . Fairmont
†Jones, R. Harold . . . . . Fairmont
Keister, H. S. . . . . Fairmont
Kinney, C. L. . . . . Ida May
†Lambert, L. R. . . . . Fairmont
Lawson, C. S. . . . . Fairmont
Leahy, W. J. . . . . Mannington
†Mallamo, J. T. . . . . Fairmont
Maxwell, J. S. . . . . Fairmont
Miller, G. R. . . . . Fairview
Moore, P. G. . . . . Mannington
Morgan, G. V. . . . . Fairmont

Norris, L. D. . . . . Fairmont
Orr, W. W. . . . . Rachel
Parks, C. L. . . . . Fairmont
†Parks, Seigel . . . . . Fairmont
Ramage, C. M. . . . . Fairmont
Rogers, F. B. . . . . Fairmont
Romino, J. D. . . . . Fairmont
Sowers, F. F. . . . . Fairmont
Spencer, L. O. . . . . Fairmont
Swisher, K. Y. . . . . Fairview
Trach, J. M. . . . . Fairmont
Trach, J. P. . . . . Fairmont
Traugh, G. H. . . . . Fairmont
Tuckwiller, J. R. . . . . Fairmont
†Vacheresse, Edw., Jr. . . . . Fairmont
†Van Horn, K. L. . . . . Fairmont
Waddell, C. W. . . . . Fairmont
Watson, Clyde . . . . . Jordan
Welton, W. A. . . . . Fairmont
Wilson, I. O. . . . . Monongah
Wise, E. D. . . . . Fairmont
Yost, Herschel R. . . . . Fairmont
Yost, Joe . . . . . Fairmont
Yost, Paul . . . . . Fairmont

MARSHALL

†Ashworth, Harold . . . . . Moundsville
Ashworth, R. A. . . . . Moundsville
Benson, Don S. . . . . Moundsville
Boggs, W. C. . . . . Wheeling
Bone, B. F. . . . . Moundsville
†Bradford, Wm. P. . . . . Moundsville
Covert, O. F. . . . . Moundsville
Ealy, D. B. . . . . Moundsville
*Fortney, M. J. . . . . Hundred
Grimm, R. B. . . . . Cameron
Hartwig, W. B. . . . . Wheeling
Hill, W. G. C. . . . . Moundsville
Luikart, J. H. . . . . Moundsville
†McIlvain, W. E. . . . . Moundsville
Morgan, C. G. . . . . Corpus Christi (Tex.)
Parker, H. S. . . . . McMechen
Peck, J. C. . . . . Moundsville
Striebich, J. A. . . . . Moundsville
Yoho, S. F. . . . . Moundsville

MASON

Barker, D. C. . . . . Pt. Pleasant
Buell, Blinn A. . . . . Point Pleasant
Elgosin, R. B. . . . . Pt. Pleasant
Husband, A. K. . . . . Pt. Pleasant
Koenigsberg, M. . . . . Pt. Pleasant
Long, Frank . . . . . Pt. Pleasant
McElfresh, Edward V. . . . . Pt. Pleasant
Petty, C. W. . . . . Hartford
Smith, D. V. . . . . Letart

MERCER

†Bertling, M. H. . . . . McComas
Bird, Ben W., Jr. . . . . Princeton
Blaydes, J. E. . . . . Bluefield
Byrd, A. M. . . . . Bluefield
Calvert, J. W. . . . . Lamar
Clements, B. S. . . . . Matoaka
Connell, H. R. . . . . Bluefield
†Davis, H. C. . . . . Bluefield, (Va.)
Davidson, S. G. . . . . Bluefield
Fox, J. F. . . . . Bluefield
Fox, P. R. . . . . McComas
†Fugate, R. C. . . . . Bluefield
†Gage, E. L. . . . . Bluefield
Goodall, F. C. . . . . Matoaka

Goodykoontz, C. H., Jr. ..... Bluefield
†Hale, Daniel ..... Princeton
Hare, O. S. ..... Bluefield
Harloe, W. M. ..... Matoaka
Hochfeld, Otto ..... Bluefield
Hoge, A. H. ..... Bluefield
Holroyd, F. F. ..... Princeton
Holroyd, F. J. ..... Princeton
Horton, E. W. ..... Bluefield
Hosmer, D. L. ..... Bluefield
Huff, Frank M. ..... Bluefield
†King, O. G. ..... Bluefield
Lepper, D. B. ..... Bluefield
Luttrell, H. B. ..... Bramwell
Markell, J. I. ..... Princeton
McGuire, John ..... Bluefield
†Pace, L. J. ..... Princeton
Reynolds, C. J. ..... Bluefield
Richmond, F S. ..... Bluefield
Rogers, R. O. ..... Bluefield
St. Clair, C. T. ..... Bluefield
St. Clair, C. T., Jr. ..... Bluefield
St. Clair, W. H. ..... Bluefield
St. Clair, W. H., Jr. ..... Bluefield
Scott, C. M. ..... Bluefield
Shanklin, J. R. ..... Bluefield
Sinclair, M. W. ..... Bluefield
Slusher, W. C. ..... Bluefield
Smith, I. M. ..... Princeton
Steele, H. G. ..... Bluefield
Stuart, R. R. ..... Bluefield
Tanner, E. M. ..... Bluefield
Todd, G. L. ..... Princeton
†Todd, G. L., Jr. ..... Princeton
Van Reenan, A. C. ..... Bluefield
Vass, T. E. ..... Bluefield
Vermillion, J. R. ..... Princeton
Vermillion, Uriah ..... Athens
†Weier, Karl E. ..... Bluefield
†Wiser, Henry J. ..... Bluefield

MINGO

Akers, R. M. ..... Kermit
Boland, L. F. ..... Williamson
Boutwell, J. H. ..... Red Jacket
Brewster, G. W. ..... Oceana
Burgess, T. D. ..... Williamson
Burgess, W. H. ..... Williamson
Easley, G. W. ..... Williamson
†Gaskel, J. C. ..... Williamson
Gibson, B. R. ..... McAndrews, (Ky.)
†Hall, Carl B. ..... Red Jacket
Hays, H. C. ..... Williamson
Hodge, O. P. ..... Matewan
Irvine, G. B. ..... Williamson
Johnson, J. E. ..... Stone, (Ky.)
Lawson, J. C. ..... Williamson
Lee, J. D. ..... Williamson
McClees, J. E. ..... Kimberly
McClellan, Ernest ..... Williamson
Moore, M. P. ..... Williamson
Peery, C. E. ..... Sobato
Poliakoff, Nathan ..... Williamson
Price, W. H. ..... Chattaroy
Quincy, F. B. ..... Williamson
Scott, W. W. ..... Williamson
Stepp, E. P. ..... Kermit
Walker, W. J. ..... Iaeger
Yost, J. W. ..... Williamson
Zando, S. G. ..... Williamson

† In Military Service.
* Honorary Member.

MONONGALIA

†Baker, Wm. P. ..... Morgantown
Becker, M. E., Jr. ..... Morgantown
†Brannan, Dorsey ..... Morgantown
Bray, C. M. ..... Morgantown
Caserta, Peter ..... Morgantown
*Cobun, L. W. ..... Morgantown
Collins, A. B. ..... Blacksville
Cottle, S. W. ..... Morgantown
†Crynock, P. D. ..... Morgantown
Dent, Charles F. ..... Morgantown
Fenton, C. C. ..... Morgantown
Fisher, R. W. ..... Morgantown
†Gerchow, K. E. ..... Morgantown
Heiskell, E. F. ..... Morgantown
Howell, W. H. ..... Morgantown
John, Brinley ..... Morgantown
Johnson, C. E. ..... Morgantown
Klein, J. I. ..... Morgantown
Leeson, L. R. ..... Morgantown
Madera, W. L. ..... Morgantown
*Maxwell, C. H. ..... Morgantown
Maxwell, G. R. ..... Morgantown
McBee, T. Jud ..... Morgantown
†Miller, F. R. ..... Morgantown
Moser, W. C. ..... Morgantown
Phillips, G. W. ..... Morgantown
†Pickett, J. C. ..... Morgantown
†Post, D. M. ..... Morgantown
Pride, C. B. ..... Morgantown
†Rich, H. A. ..... Morgantown
Romine, C. C. ..... Morgantown
Scanlon, F. T. ..... Morgantown
Scherr, W. B. ..... Morgantown
*Simpson, J. N. ..... Morgantown
†Sleeth, C. K. ..... Morgantown
†Stecker, J. F. ..... Morgantown
†Stephens, James T. ..... Pursglove
Stephens, Jeanne ..... Oberlin (Ohio)
Stout, B. M. ..... Morgantown
†Strawn, L. M. ..... Morgantown
Summers, R. R. ..... Morgantown
Taylor, A. C. ..... Mona
Thompson, C. T. ..... Morgantown
Thompson, James ..... Morgantown
†Trotter, J. H. ..... Morgantown
Tucker, E. B. ..... Morgantown
Van Liere, E. J. ..... Morgantown
Warman, W. M. ..... Morgantown
Whittlesey, F. R. ..... Morgantown
*Wylie, C. B. ..... Morgantown

McDOWELL

Anderson, J. H. ..... Hemphill
Armentrout, L. H. ..... Welch
Bailey, J. B. ..... Davy
Bennett, J. A. ..... Algoma
Bracey, A. H. ..... Welch
Bracey, H. A. ..... Welch
Bragonier, R. K. ..... Keystone
†Butte, C. I., Jr. ..... McDowell
Campbell, Hawes, Jr. ..... Gary
Camper, H. G. ..... Welch
†Carr, A. B. ..... War
†Chandler, C. B. ..... Iaeger
Chapman, C. B. ..... Welch
Clark, C. T. ..... Iaeger
Clark, R. D. ..... Caretta
Cochrane, C. C. ..... Kimball
Cooper, J. K. ..... Premier
Coulon, N. F. ..... Thorpe
*Daniel, S. A. ..... Welch
Davis, J. E. ..... Welch
†Dunman, L. E. ..... Gary
Dyer, N. H. ..... Bartley
Edwards, R. H. ..... Welch
Elliott, Boyce ..... Hemphill
Evans, G. P. ..... Iaeger
Evans, H. P. ..... Keystone
Fowlkes, R. H. ..... Crumpler
Frazier, Ralph ..... Gary
†Gates, Edmond ..... Welch
†Gersabeck, Arthur ..... Maybeury
†Goodwin, F. H. ..... Welch
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†Hancock, H. J. ..... Welch
Hatfield, D. D. ..... Yukon
Hughes, C. R. ..... Eckman
Hutchinson, J. C. ..... Welch
Johnston, C. F. ..... Welch
Johnston, W. L. ..... McDowell
Killey, J. C. ..... Vivian
†Kroll, Peter G. ..... Welch
La Prade, F. E. ..... Welch
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McCarty, J. L. ..... Berwind
Murry, J. H. ..... Jenkinjones
Odell, Sid ..... Switchback
Peters, I. T. ..... Maybeury
Read, B. J. ..... Welch
Rivers, D. G. ..... Gilliam
Schiefelbein, H. T. ..... Welch
†Shanes, Herbert N. ..... Coalwood
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Smith, M. W. ..... Warren (Ohio)
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†Stevens, W. R. ..... Kimball
Straub, G. L. ..... Welch
Torregrossa, M. F. ..... Ashland
Vermillion, E. E. ..... Welch
†Vermillion, J. S. ..... Welch
Vick, C. W. ..... Jenkinjones
†Villani, A. J. ..... Welch
Ward, C. F. ..... Portsmouth (Va.)
†Warren, J. O. ..... Welch
Wetherby, V. L. ..... Welch
Whitehill, J. E. ..... Hemphill
Whitney, L. L. ..... Elbert
†Wilson, Arnold ..... Welch
Young, W. B. ..... Northfork

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†Ackerman, W. E. ..... Wheeling
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†Bandi, R. T. ..... Wheeling
Belgrade, J. T. ..... Wheeling
†Bickel, C. S. ..... Wheeling
Bippus, E. S. ..... Wheeling
†Bird, J. D., Jr. ..... Elm Grove
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†Buffington, C. B. ..... Wheeling
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Clovis, E. E. ..... Wheeling
Caldwell, J. R. ..... Wheeling
Copeland, H. B. ..... Wheeling
Cracraft, W. A. ..... Wheeling
†Dobbs, F. H. ..... Wheeling
†Dobbs, L. F. ..... Wheeling
†Drinkard, R. U. ..... Wheeling
Earnest, A. C. ..... Wheeling
*Eskey, J. L. ..... Wheeling
Farri, L. B. ..... Wheeling
Fawcett, Ivan ..... Wheeling

Foley, Joseph M. . . . . Wheeling
†Gaynor, John S. . . . . Wheeling
Gaydosh, M. . . . . Wheeling
Gill, R. D. . . . . Wheeling
Gilmore, J. W. . . . . Wheeling
Glass, E. F. . . . . Wheeling
Greeneltch, D. E. . . . . Wheeling
Haislip, N. L. . . . . Wheeling
Harpfer, H. C. . . . . Wheeling
Hazlett, James C. . . . . Wheeling
Higgins, A. W. . . . . Wheeling
Holley, C. J. . . . . Wheeling
*Howells, J. O. . . . . Bridgeport, (O.)
Jones, A. L. . . . . Wheeling
Jones, E. L. . . . . Wheeling
Joseph, N. K. . . . . Wheeling
Joseph, Wildas . . . . . Wheeling
Kalbfleisch, W. K. . . . . Wheeling
Keesor, C. H. . . . . Wheeling
Klug, T. M. . . . . Wheeling
Lewellyn, R. H. . . . . Elm Grove
†Little, H. G. . . . . Wheeling
†Lukens, R. W. . . . . Wheeling
Lyon, L. A. . . . . Wheeling
MacGregor, D. A. . . . . Wheeling
†McClung, James R. . . . . Wheeling
McClure, W. T. . . . . Wheeling
McColl, J. H. . . . . Wheeling
McCoy, A. V. . . . . Elm Grove
McCoy, C. G. . . . . Elm Grove
McCurdey, J. A. . . . . Wheeling
McCuskey, W. C. D. . . . . Wheeling
McLain, W. H. . . . . Wheeling
Meier, J. S. . . . . Wheeling
†Murphy, J. H. . . . . Wheeling
Niehaus, A. J. . . . . Wheeling
Nolte, A. E. . . . . Wheeling
†Osterman, A. L. . . . . Wheeling
Pedicord, R. M. . . . . Elm Grove
Pell, E. N. . . . . Wheeling
†Perilman, Wm. . . . . Wheeling
Peterson, Heyes . . . . . Wheeling
Phillips, E. M. . . . . Wheeling
Phillips, E. S. . . . . Wheeling
Phillips, Edward S. . . . . Wheeling
Phillips, H. T. . . . . Wheeling
Phillips, R. W. W. . . . . Wheeling
Phillips, Wilson S. . . . . Wheeling
Quimby, W. A. . . . . Wheeling
†Rankin, J. O. . . . . Wheeling
Reed, R. J. . . . . Wheeling
Reed, R. J., Jr. . . . . Wheeling
Sammons, W. P. . . . . Wheeling
Sauder, H. R. . . . . Wheeling
†Sheppe, W. M. . . . . Wheeling
Smith, Harry A. . . . . Carbondale (Ill.)
Snider, R. J. . . . . Wheeling
†Sonneborn, Robert M. . . . . Wheeling
Staats, O. M. . . . . Wheeling
†Stewart, J. K. . . . . Wheeling
Strobel, G. E. . . . . Wheeling
Thoner, J. G. . . . . Wheeling
Thomassene, R. A. . . . . Wheeling
Tretheway, S. W. . . . . Wheeling
†Vieweg, G. L., Jr. . . . . Wheeling
†Walters, J. W. . . . . Wheeling
Wanner, A. L. . . . . Wheeling
Webb, W. S. . . . . Warwood
†Weiler, H. G. . . . . Wheeling
Williams, M. B. . . . . Wheeling
*Wingerter, C. A. . . . . Wheeling
Zubak, M. F. C. . . . . Wheeling

† In Military Service.
* Honorary Member.

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*Barrows, J. E. . . . . Parkersburg
†Bateman, George . . . . . Williamstown
†Bevauqua, W. A. . . . . Parkersburg
†Blair, Holmes . . . . . Parkersburg
Boice, R. H. . . . . Parkersburg
†Boling, T. R. . . . . Grantsville
*Boyers, C. L. . . . . Parkersburg
Bronaugh, Wayne . . . . . Parkersburg
*Brown, C. N. . . . . Swandale
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Crooks. E. W. . . . . Parkersburg
Davis, R. E. . . . . Parkersburg
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†England, Welch . . . . . Parkersburg
*Fisher. M. O. . . . . Parkersburg
Gaynor, H. E. . . . . Parkersburg
Gilmore, M. A. . . . . Parkersburg
Giltner, H. A. . . . . Parkersburg
†Goodhand, Charles . . . . . Parkersburg
Goff E. T. . . . . Parkersburg
Goff, W. R. . . . . Parkersburg
*Grimm, A. S. . . . . St. Marys
†Hamilton, Richard . . . . . St. Marys
Harris, T. L. . . . . Parkersburg
†Harsha, G. M. . . . . Sistersville
Hartman, E. C. . . . . Parkersburg
†Holmes, E. B. . . . . Parkersburg
*Jeffers, G. D. . . . . Parkersburg
Jones, A. M. . . . . Parkersburg
Jones, James P. . . . . Pennsboro
Jones, L. P. . . . . Pennsboro
Judy, W. J. . . . . Parkersburg
Keith T. W. . . . . Harrisville
Kraft, C. D. . . . . Parkersburg
†Kroger, Louis E. . . . . Parkersburg
Lattimer, R. D. . . . . Parkersburg
†Lutz, A. R. . . . . Parkersburg
Miller, R. B. . . . . Parkersburg
Newman, R. C. . . . . Spencer
†Nicholson, B. B. . . . . Parkersburg
Potter, Fred . . . . . Parkersburg
†Priddy, N. D. . . . . Ravenswood
Prunty, S. M. . . . . Parkersburg
Robinson, B. O. . . . . Parkersburg
*Rogers, J. G. . . . . Parkersburg
Rogers, Watson F. . . . . Parkersburg
Rose, L. O. . . . . Parkersburg
†Santer, M. A. . . . . Parkersburg
†Shafer, C. W. . . . . Spencer
Sidell, A. R. . . . . Williamstown
†Staats, E. D. . . . . Ripley
Starcher, R. C. . . . . Ripley
Starkey, P. C. . . . . Ravenswood
Veon, H. H. . . . . Parkersburg
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†Wharton, R. H. . . . . Parkersburg
†Widmeyer, R. S. . . . . Parkersburg
*Wise, S. D. H. . . . . Parkersburg
†Woofter, A. C. . . . . Parkersburg
Wright, E. L. . . . . Parkersburg
†Yeager, W. R. . . . . Parkersburg

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†Bess, Robert . . . . . Piedmont
Bess, Thomas . . . . . Keyser
Brooks, O. V. . . . . Moorefield
Courrier, E. A. . . . . Keyser
Dailey, R. W. . . . . Romney
Drinkwater, W. G. . . . . Gormania
Dyer, V. L. . . . . Petersburg
Easton, J. F. . . . . Romney
Flick, W. A. . . . . Keyser
Gamble, Henry L. . . . . Moorefield
†Giffin, T. C. . . . . Keyser
*Gochenour, G. S. . . . . Moorefield
Grove, J. B. . . . . Petersburg
Hartle, Gerald E. . . . . Wardensville
Huffman, T. T. . . . . Keyser
Johnson, S. B. . . . . Franklin
King, C. E. . . . . Petersburg
Love, R. W. . . . . Moorefield
McFarland, W. F. . . . . Keyser
Mitchell, O. F. . . . . Franklin
Moyers, B. F. . . . . Mathias
†Newcome, J. A. . . . . Keyser
Reynolds, O. S. . . . . Franklin
Rollings, H. W., Jr. . . . . (Va.)
Sisson, R. R. . . . . Blaine
†Wilson, P. R. . . . . Piedmont
Wolverton, J. H. . . . . Piedmont
Wolverton, J. H., Jr. . . . . Piedmont
Wright, M. F. . . . . Burlington

PRESTON

Arnett, J. C. . . . . Eglon
Edson, R. C. . . . . Hartford (Conn.)
Fortney, F. D. . . . . Newburg
†Greenberg, Ralph C. . . . . Masontown
†Harman, R. D. . . . . Kingwood
Johnson, W. P., Jr. . . . . Arthurdale
Lehman, J. F. . . . . Kingwood
†McIntire, T. S. . . . . Rowlesburg
†McLane, R. A., Jr. . . . . Masontown
Miller, B. B. . . . . Eglon
Miller, H. C. . . . . Eglon
†Moser, C. Y. . . . . Kingwood
Salkin, David . . . . . Hopemont
Sauer, David . . . . . Kingwood
Smith, C. E. . . . . Terra Alta
Starkey, A. L. . . . . Hopemont
Sturdivant, B. B. . . . . Rowlesburg
Taylor, J. Boyce . . . . . Bruceton Mills
Viehman, A. J. . . . . Hopemont
Watson, E. E. . . . . Kingwood
White, S. R. . . . . Bruceton Mills

RALEIGH

†Ashton, D. C. . . . . Beckley
†Ayers, L. R. . . . . Beckley
Banks, F. L. . . . . Beckley
*Banks, M. C. . . . . Raleigh
Bolen, J. W., Jr. . . . . Beckley
Bowles, A. G. . . . . Glen White
Broaddus, R. G. . . . . Beckley
†Campbell, J. A., Jr. . . . . Glen Rogers
Chambers, H. D. . . . . Whitesville
Chambers, R. W. . . . . Beckley
Coleman, T. R. . . . . East Gulf
Coram, J. M. . . . . Beckley
Covey, W. C. . . . . Winding Gulf
†Cunningham, G. R. . . . . Killarney
Cunningham, W. H. . . . . Beckley
Daniel, D. D. . . . . Eccles

*Daniel, G. P. ..... Glen Daniel
Daniel, R. P. ..... Pemberton
†Davis, W. W. ..... Beckley
Derkach, S. L. ..... Glen Rogers
†Dudney, L. R. ..... Layland
DuPuy, Samuel S. ..... Cranberry
†Dupuy, E. N. ..... Beckley
*Eakin, B. W. ..... Tams
Echols, A. C. ..... Layland
Engel, R. B. ..... Slab Fork
Ford, S. A. ..... Edwight
Garrett, T. F. ..... Sprague
Greene, J. H. ..... Whistler, (Ala.)
Gwinn, G. E. ..... Beckley
Haddox, J. L. ..... Montcoal
Halloran, L. M. ..... Beckley
Harkleroad, F. S. ..... Beckley
Hedrick, E. H. ..... Beckley
†Hedrick, G. C., Jr. ..... Beckley
Houser, L. G. ..... Beckley
*Hume, W. W. ..... Beckley
Jackson, E. D. ..... Pemberton
*Jarrell, D. B. ..... Beckley
Jarrell, K. M. ..... Beckley
Johnson, G. W. ..... McAlpin
†Jones, C. T. ..... Pemberton
Kessel, Clark ..... Beckley
Marquis, Henrietta ..... Beckley
Mays, W. C. ..... Stanaford
McKenzie, J. E. ..... Beckley
†McPherson, K. M. ..... Beckley
Mitchell, R. C. ..... Sophia
Moore, F. J. ..... Affinity
†Moore, Moore, Jr. ..... Beckley
Moran, W. G., Jr. ..... Fireco
Newman, Ross E. ..... Beckley
†Nutter, P. D. ..... Beckley
Peter, B. K. ..... Beckley
Pickens, J. K. ..... Iaeger
Pomputius, W. F. ..... Helen
Pronko, M. J. ..... Beckley
Ralsten, M. M. ..... Beckley
Riley, W. M. ..... Lillybrook
Robins, J. E. ..... Glen Morrison
Rose, Wm. A. ..... Ameagle
Ruark, W. T. ..... Sweet Springs
Ryan, D. M. ..... Hinton
Shaffer, H. A. ..... Beckley
Shrewsbury, L. E. ..... Beckley
†Smith, C. A. ..... Beckley
Smith, R. G. ..... Beckley
Tieche, A. U. ..... Beckley
Trippett, K. H. ..... Mabscott
†Vaughn, P. E. ..... Beckley
Vermillion, T. U. ..... Beckley
†Whitlock, J. W. ..... Amigo
Williams, J. O. ..... St. Albans
†Wood, E. W. ..... Beckley
†Woolwine, J. H. ..... Tams
Wray, Everett B. ..... Stotesbury
Wriston, Robert ..... Beckley

SUMMERS

*Cooper, O. O. ..... Hinton
†Holmes, Albert W. ..... Hinton
Howard, C. L. ..... Hinton
Johnson, Jesse T. ..... Hinton
†McNeer, Buford W. ..... Hinton
McNeer, F. L. ..... Hinton
Pence, G. L. ..... Hinton
Ritter, D. W. ..... Hinton
Stokes, J. W. ..... Hinton
Van Sant, W. L. ..... Hinton

TAYLOR

Bucklew, E. R. ..... Grafton
Heironimus, T. W., Jr. ..... Alpoca
Kimble, J. U. ..... Grafton
Noble, H. L. ..... Nashville (Tenn.)
Peck, D. C. ..... Grafton
Shafer, C. F. ..... Grafton
Stout, R. D. ..... Grafton
Warden, Paul ..... Grafton

WETZEL

Blum, E. C. ..... New Martinsville
Dyer, A. M., Jr. ..... Pine Grove
†Gordon, T. B. ..... New Martinsville
Hornbrook, Kent ..... New Martinsville
Martin, F. E. ..... New Martinsville
†Miller, R. F. ..... Paden City
Pyles, John W. ..... New Martinsville
Stanley, L. P. ..... Pine Grove
Theiss, John ..... New Martinsville
Zinn, R. H. ..... Hundred

WYOMING

Bailiff, J. O. ..... Mullens
Biggart, J. F. ..... Mullens
Dearing, Walter ..... Mead
Hatfield, R. C. ..... Oceana
Khorozian, K. G. ..... Pineville
Lane, E. C. ..... Pineville
†Mangus, J. E. ..... Pineville
Penn, F. H. ..... Mullens
Steele, B. W. ..... Mullens
Wilkinson, D. D. ..... Wyco
Wilkinson, E. M. ..... Pineville
†Wylie, Ward ..... Mullens
Zsoldos, F. J. ..... Pineville

Doctors in the War

DOCTORS COMMISSIONED IN DECEMBER

The names of several West Virginia doctors who have accepted commissions in the Army and Navy have been reported to the headquarters office of the West Virginia State Medical Association, since the compilation of the list that was printed in the December issue of the JOURNAL.

The following supplemental list was compiled as of December 22, 1942:

	BROOKE	
H. L. Hegner	Wellsburg	Army
	CABELL	
F. L. Coffey	Huntington	Army
E. M. Meek	Huntington	Army
	FAYETTE	
John L. Feldman	Longacre	Army
	KANAWHA	
James E. Grace	Cabin Creek	Navy
C. A. Jarrell	Belle	Army
J. T. Peters	South Charleston	Army
	LOGAN	
Joseph L. Greene	Logan	Army
	McDOWELL	
C. N. Gross	Welch	....
Phil Smith	Welch	....
	OHIO	
John S. Gaynor	Wheeling	Army
J. O. Rankin	Wheeling	Army
	PARKERSBURG ACADEMY	
Welch England	Parkersburg	Army

A Medical Prophet

Dr. Jacob Hale in 1840 insisted that specific germs must be the causes of specific diseases! Though he searched and searched, however diligently with his microscope—he never found a single germ! Why? Because he didn't hit upon the proper stain. It was only fitting, therefore, that his own pupil—Dr. Robert Koch—did hit upon the proper stains—and thereby discovered germ after germ, notable the TB and cholera bacilli!—*Bulletin of Toledo Academy of Medicine.*

Woman's Auxiliary

WEST VIRGINIA WOMEN HONORED

Mrs. John P. Helmick, of Fairmont, president-elect of the Woman's Auxiliary to the West Virginia State Medical Association, was elected to the same office in the Southern Medical Association, at the annual meeting recently held in Richmond. At the same session, Mrs. Welch England, of Parkersburg, immediate past president of the Auxiliary to the West Virginia State Medical Association, was elected a member of the Council.

Mrs. Richard H. Clark, of Hattiesburg, Miss., is the new president of the Auxiliary to the Southern Medical Association.

START THE NEW YEAR RIGHT!
BUY WAR BONDS
AND STAMPS!

The Physician's Role

"* * * The physician's role looms large and his task immense; one wonders whether his public role in times to come will not be greater than that of any other profession. The engineer and the architect will be needed, to be sure—but these will appear, for humanity emerges quickly from the darkness of the tortures which history imposes upon it, and it rises readily to dream and to play with its own imagination. But a far greater need, that of restoring the value of human life, individual and communal, is more difficult to supply in a post war world. This task is medical in spirit and practice, inalienable from the doctor in war as well as in peace. It is a task the responsibility for which is imposed on the physician by the very tragedy of human life. To this honorable responsibility he can only pay respectful obeisance. It need not be enhanced, it cannot be avoided."—*Gregory Zilboorg in Virginia Medical Monthly.*

BUY WAR BONDS!

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All Modern Equipment and Conveniences.

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840 NORTH NELSON ROAD

R. A. KIDD, JR., M. D., *Associate*
TELEPHONE FA. 1315

TUBERCULOSIS ABSTRACTS

(Continued from page 23)

especially in infant lives, and which emphasize the urgency of means for discovering these nests of infection and the need for their adequate control.

A Further Review of Tuberculosis in Wartime, F. Heaf and L. Rusby, Tubercle, May, 1942.

France

Food rationing started throughout France on October 1, 1940, when the following foods were restricted: bread, meat, cheese, fats, sugar, milk, chocolate and milled products. Technically other foods could be obtained, but in reality it was difficult to get them. The results of a survey carried on by the Institut des Recherches d'Hygiene on how different families of Paris were feeding themselves showed a total caloric insufficiency of about a thousand calories daily, a calcium deficiency and a calcium-phosphorus imbalance and an insufficient intake of vitamin A.

Undoubtedly morbidity and mortality from tuberculosis have noticeably increased in Paris. The percentage of rapidly-developed tuberculosis has gone up in an alarming manner. Comparing the figures of the first six months of 1941 with the corresponding ones in 1939, the mortality from tuberculosis increased 10 per cent.

Four basic diets were prescribed for sick persons in four specific categories. To lessen the ill effects upon persons with active tuberculosis and known lesions, a diet was given which corresponded to their general category, plus a supplementary amount of 45 grams of meat and 15 grams of fat daily per patient. Despite the precaution indicated, the march of tuberculosis up to October, 1941, had been ominously progressive; thus if the present dietary regime continues and the consequences increase, the problem of tuberculosis in France will be exceedingly grave.

Food Rationing and Mortality in Paris, 1940-41, Ramon F. Minoli, Milbank Memorial Fund Quarterly, July, 1942.

Canada

The fall in the death rate from tuberculosis in Canada, which has been so evident for the past quarter of a century, has occasioned in some quarters a false sense of security. Nothing could be more unsound or misleading. A disease that kills nearly 6,000 of the population, leaves at least 30,000 incapacitated, and costs the country directly

AERIAL VIEW

The Sawyer Sanatorium offers facilities for the treatment of patients suffering from Nervous Diseases, Mental Disorders, Psychoneuroses, including Involutional Psychoses; Arterio-Sclerotic, Senile and Adolescent Mental Disorders; Paralyses; Cardiac, Cardio-renal and Hypertensive Nervous Conditions; and the various manifestations associated with them.

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at least $8,000,000, annually, is still a formidable enemy and a major public health problem.

If control of tuberculosis is to be maintained in wartime, tuberculosis services must be continued, problems that arise as a result of the war must be attacked and advantage taken of wartime case-finding projects. Case finding has kept ahead of treatment facilities, which have been inadequate, and until both are developed to a greater degree, control of tuberculosis is still hidden in the future.

Two of the most important phases of case-finding services available are (1) for the general practitioners to provide an early diagnosis, since this is still the greatest source of cases, and (2) examination of contacts, the next greatest source.

Two opportunities have presented themselves as a result of the war: the x-ray examination of all recruits for the armed forces and case-finding projects among industrial workers, particularly in war industries. Tuberculosis is two and a half times as great in industry as in the general population. Therefore, the control of tuberculosis is an important phase of industrial hygiene.

Emphasis is being placed on retaining the open case of tuberculosis in sanatoria. Every patient who leaves against advice represents a weakness in the tuberculosis control system. The factors involved should be carefully analyzed and every way possible must be sought to remedy conditions in institutions to offset this failure in efficient segregation.

Profeta's Law

This law was enunciated by Dr. Giuseppe Profeta (1840-1910), of Palermo, in an article, "Sulfa Sifilide per Allattamento" (Syphilis from Nursing) that appeared in Lo Spermentale (IV series 15:328-338 and 339-418, 1865). A portion of the translation follows:

"Thus, the healthy child born of a syphilitic mother may with impunity take the breast of its own mother or that of a syphilitic nurse, and neither the milk nor the presence of infectious lesions on the breast of the mother or the wet nurse is capable of transmitting the disease.—*New England Journal of Medicine.*

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Urology Award

The American Urological Association offers an annual award 'not to exceed $500' for an essay (or essays) on the result of some specific clinical or laboratory research in Urology. The amount of the prize is based on the merits of the work presented, and if the Committee on Scientific Research deem none of the offerings worthy, no award will be made. Competitors shall be limited to residents in urology in recognized hospitals and to urologists who have been in such specific practice for not more than five years.

The selected essay (or essays) will appear on the program of the forthcoming meeting of the American Urological Association, May 31 - June 3, 1943, Hotel Jefferson, St. Louis, Missouri.

Essays must be in the hands of the Secretary, Dr. Thomas D. Moore, 899 Madison Avenue, Memphis, Tennessee, on or before March 1, 1943.

Beriberi Heart in 4 Month Old Infant

The daily diet of the average young infant is deficient in thiamine hydrochloride or vitamin B^1 and should be supplemented with that vitamin, Henry Rascoff, M.D., Brooklyn, advises in *The Journal of the American Medical Association* for December 19 in a report of a 4 month old infant who was on a limited diet of boiled human milk for two months and subsequently developed a beriberi heart which diminished in size with thiamine hydrochloride treatment.

Report Observation on Eye Disease

Reporting on observations made on more than 200 patients with epidemic keratoconjunctivitis, the acute inflammatory disease of the eye which has spread from ship building plants on the West Coast to the East Coast, Michael J. Hogan, M.D., and Joseph W. Crawford, M.D., San Francisco, report in the current issue of *War Medicine* that: "The disease is most likely caused by a virus, the nature of which is unknown, but which may be related to the herpes facialis group. The condition is not highly infectious. * * *"

Implied Doubt

A doctor friend's little girl was saying her prayers: "And bless Daddy and Mummy and make them happy—if they're not too old for that sort of thing."—*Texas State Journal of Medicine.*

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ENTERED AS SECOND-CLASS MATTER, JANUARY 1, 1926, AT THE POST OFFICE AT CHARLESTON, WEST VIRGINIA

Vol. XXXIX February, 1943 No. 2

UROLOGIC CONSIDERATIONS IN PEDIATRICS*

By MEREDITH F. CAMPBELL
New York City, New York

Disease of the urogenital apparatus is one of the commoner afflictions of infancy and childhood. Most urologic disease in the young is associated with developmental anomalies which occur in about ten per cent of all individuals. It is axiomatic that an anomalous organ is more prone to disease than a normal one. Most urogenital anomalies are fundamentally obstructive in nature and thus interfere with free urinary drainage; as a corollary, they not only predispose to infection but usually seriously interfere with cure of the infection until the obstructive factor is removed. An anomaly such as hypospadias, vesical exstrophy, fused labia minora or cryptorchidism is readily apparent but in most instances the anomaly will be identified only by thorough urologic examination and as an associated etiologic factor in chronic urinary infection (for example: ureteral stricture, vascular obstruction of the ureter, congenital contracted bladder outlet, and so forth). In the present brief discussion we are concerned with (1) the indications for thorough urologic examination in the young (2) the methods of urologic examination and (3) the common lesions revealed by these investigations together with a brief consideration of their treatment. Such studies have demonstrated that with the exception of the epithelial neoplasms of the external genitalia, infants and children are subject to the same urologic diseases as adults. Because of this, clinical alertness in the demonstration of the urologic pathology in children with urogenital tract symptoms is essential if these patients are to be helped or, in many instances, if their lives are to be saved.

THE AUTHOR

Dr. Meredith F. Campbell, graduate Columbia University; interned Bellevue Hospital; Professor of Urology, N. Y. University College of Medicine; Assoc. Attending Urologist, Bellevue Hospital; American Urological Association; Association of Genito-Urinary Surgeons.

INDICATIONS FOR UROLOGIC EXAMINATION IN CHILDREN

1. Urinary infection which persists more than one month despite intensive medical therapy.

*Presented before the annual meeting of the West Virginia State Medical Society, Huntington, West Virginia, July 13, 1942.

2. Urinary infection which persists acute or hyperacute despite four to six days of intensive medical treatment.
3. Disturbances of urination—dysuria, frequency, urgency, etc.
4. Hematuria (except acute nephritis).
5. Abdominal pain.
6. Abdominal tumor.
7. Anomaly of the external genitalia.
8. Urogenital injury.
9. Hypertension.
10. Renal insufficiency.
11. Enuresis.
12. Spinal cord injury in disease.
13. Retarded growth.

METHODS OF UROLOGIC EXAMINATION

Before subjecting the child to any instrumental examination certain data must be obtained. First and foremost is a satisfactory urinalysis, including urine culture. The specimen for analysis from females of all ages should be collected by catheterization and especially must catheterization be employed for the culture specimen. In males a satisfactory specimen can usually be obtained if the collection is made only after the prepuce has been widely retracted and the glans and external urethral meatus has been thoroughly cleaned with an antiseptic solution such as bichloride or oxycyanide of mercury 1:500. The patient then passes a few cubic centimeters of urine to lavage the urethra. The urine next passed is collected in a sterile receptacle for urinalysis and culture. If this method cannot be followed, catheterization should be employed.

Roentgenographic studies are imperative. These include not only the plain urograms for calculi and spinal defects but also excretory and often retrograde urography. In infants about half of the excretory urographic studies will be unsatisfactory. We insist on no preparation of the bowels for urography.

Precystoscopic excretory urography is routine in our practice and in many instances will render retrograde urography unnecessary. Moreover, we strongly advise an excretory urographic study in all patients with chronic pyuria cured by the newer and more powerful antiseptics (mandelic acid and sulfonamide groups). These drugs will often sterilize the urine even though a serious urinary tract anomaly or obstruction exists and which would unknowingly be permitted to persist in the absence of excretory urographic demonstration. A similar study may advisedly be made in all patients with chronic nephritis, in many of whom unsuspected obstruction and long-standing low grade infection exists. We have observed some striking examples of advanced renal disease due to congenital urinary obstruction, uninfected, yet presenting the classic picture of Bright's disease. Constant consideration of these facts is important.

The renal function is determined by blood chemistry (nitrogen retention) and phenolsulphonphthalein excretion estimation. Observation as to the presence of bladder residuum is made and the blood pressure is taken.

CYSTOSCOPIC EXAMINATION

With the foregoing data at hand, cystoscopic examination is made with miniature instruments. We have performed several such instrumental investigations in infants two to four weeks of age. In our Children's Clinic general (ether) anesthesia is used in not over 5 per cent of the patients at the present time and most of these are young boys or refractory girls. In 25 per cent of the cases we employ intravenous (sodium pentobarbital) anesthesia for the examination and in the remainder use caudal, sacral, local, or no anesthesia. Most girls four years and over require no anesthesia of any kind unless they are exceptionally nervous. Some young children are kept sufficiently quiet by the administration of a barbiturate preparation such as seconal. By the employment of these aids, we are now able to examine about 95 per cent of private children patients in the office. Yet I would not minimize the technical difficulties frequently encountered nor suggest that these examinations be undertaken by other than experienced urologists.

The urinary tract tissues are exceedingly delicate and may be seriously damaged by an instrument in the hands of an untrained or unskilled instrumenteur. On the other hand, reactions to properly performed cystoscopic examinations in the young occur less than half as often as in the adult and are correspondingly less severe. Moreover, neither fear of an unfortuitous reaction nor tender age should ever be considered a contraindication to a thorough urologic investigation when one or more of the previously outlined indications exists.

URINARY INFECTION

Acute persistent pyuria, the so-called persistent acute pyelitis, demands a thorough urologic investigation when there is no clinical improvement during four to six days of intensive medical treatment. In most of these cases, the examination will reveal grave urologic disease which frequently demands immediate operation. Infected hydronephrosis is the commonest single lesion but not infrequently widespread renal suppuration converts the kidney into a purulent sac. Diagnostic delay in these cases frequently means death.

Chronic urinary infection which resists intensive medical therapy for one month likewise calls for a complete urologic examination. To repeat: the urine specimen should always be collected by catheterization in females of all ages and by catheterization of males in whom it cannot be aseptically collected by voiding (vide supra). The number of pus cells in the urine, whether clumped or not, is of only relative interest; but it is important to demonstrate that the cells are polymorphonuclear leucocytes and not desquamated epithelium. The type of bacterial invader or invaders should be ascertained at once; this requires Gram stain of the centrifuged specimen sediment or bacteriologic culture. Etiologically, about half of these infections are due to gram-negative bacilli (chiefly the colon-typhoid group) and slightly less than half are due to gram-positive cocci (chiefly staphylococci and less often streptococci). About five per cent are due to other bacteria. In the choice of urinary antiseptics as between mandelic acid and the sulfonamide compounds, the bacteriologic indications should be observed. For example, the streptococcus fecalis (enterococcus) usually responds poorly to sulfanilamide, and mandelic acid compounds are usually ineffective against the proteus bacillus. These drugs should not be administered for more than a week at a time without rest, and only with close observation of the child and especially of the blood when sulfonamides are used.

It has been observed that in about half of the apparently or clinically cured cases of so-called pyelitis, the original etiological organisms could still be demonstrated in the urine after six months. We must therefore be interested only in bacteriologic cure and no patient should be discharged as cured until at least two negative cultures of aseptically collected specimens have been obtained. By following this dictum, not only will chronic urinary infections and the consequent anatomic injuries be prevented but "recurrences" of so-called acute pyelitis will be vastly reduced. Such recurrences are usually only exacerbations of smouldering asymptomatic unrecognized infection, persisting after clinical cure has been achieved. The fundamental importance of bacteriologic considerations in the management of urinary infections is readily apparent; failing in these considerations, we fail the patient.

OBSTRUCTION

When the urinary infection persists after four weeks of intensive medical treatment, a complete urologic examination is indicated. This will usually demonstrate some urinary tract anomaly and generally one causing obstruction, such as ureter stricture; urinary stone, bladder diverticula or bladder diverticulum may be found, or, in one of fifty cases, chronic renal caseous tuberculosis. The treatment will necessarily depend upon the demonstrated pathology. In some instances more vigorous antisepsis will suffice but most

patients will require special technical urologic treatment, such as urethral or ureteral dilatation, nephrectomy, removal of bladder stone or other surgical procedure.

To repeat: it is strongly urged that an excretory urographic study be made in patients who have had persistent urinary infection and in whom bacteriologic cure has been achieved by the administration of the new more powerful antiseptics, chiefly of the sulfonamide group. The very pernicious persistence of the infection at once suggests the likelihood of urinary obstruction or a urinary stasis producing condition in the urinary tract and whose obstructive effects continue to damage the kidney or kidneys even following the sterilization of the urine. As a corollary, the sterilization of the urine by the administration of methenamine (urotropin) is presumptive evidence that no urinary obstruction exists.

DISTURBANCES OF URINATION

Although urinary infection, urethral obstruction, vesical stone or foreign body will explain some cases of urinary disturbance in children, in most the clinical picture is loosely indicated as enuresis—night wetting, often with day wetting as well. When enuresis cannot be cured in three months with intensive medical or psychic therapy, a complete urologic examination is indicated. In 60 per cent of over 1500 such children I have thus examined, an organic cause for the bladder disturbance was found and, by appropriate treatment, was cured in a gratifying number. A tight urethra with urethrotrigonitis is the lesion most often found in enuretic girls, and prostatitis and posterior urethritis (often due to masturbation) is frequently found in boys. Wide urethral dilatation with sounds and the use of dilute silver nitrate (1:1000-1:200) locally have been effective treatment in this last group of cases in our hands.

Dysuria or difficult urination, frequency, and urgency are the commoner urinary disturbances and, in most cases, a congenital urethral or bladder neck obstruction is the basic pathology to which complicating infection is frequently added. Nevertheless bladder stone or foreign bodies, chiefly hairpins introduced into the bladder, also cause disturbing vesical symptoms. In passing it is notable that in over half of the cases of renal tuberculosis there is marked vesical frequency even without actual tuberculous involvement of the bladder. In short, disturbances of urination are not to be considered lightly and, if they resist medical therapy for more than two to three weeks, a thorough examination is indicated. The treatment will rest upon the demonstrated pathology and in the majority of cases will include urethral dilatation adequate to permit free bladder drainage. Transurethral resection with miniature operating instruments offers rapid relief with minimal surgical shock in congenital contracted bladder neck, congenital hypertrophy of the verumontanum or congenital valves of the prostatic urethra.

HEMATURIA

Hematuria in a child usually means acute nephritis and when this can be ruled out, a complete urologic examination is indicated. Infection (including tuberculosis), tumor or obstruction is most apt to be found. Usually no difficulty is encountered in establishing the diagnosis of acute nephritis: albumin, casts, and frequently red blood cells. In chronic nephritis a urologic survey is highly desirable; an excretory urographic study is the minimum. Attention is directed to the ulcerated external urethral meatus in young boys which bleeds when cracked or when the scab is loosened or pulled off. Blood is found on the underclothing. Wide meatotomy and liberal dilatation with sounds cures this condition.

Pain along the urinary tract is usually due to obstruction or infection but may result from calculus, foreign body, or other well known causes. As a rule the diagnosis is readily made by adequate urologic examination and treatment is often surgical.

Unfortunately urologic disease, especially ureteral obstruction, may simulate intra-abdominal disease in children as we have

several times observed. For example, I have now seen 17 children with ureteral obstruction, chiefly stricture, in whom the diagnosis of appendicitis had been made and the appendix fruitlessly removed. In several other children in whom the diagnosis of chronic appendicitis had been made, the discovery of the ureteral obstruction and its adequate treatment by periodic dilatation brought about prompt relief of symptoms and spared the child a needless appendectomy.

TUMOR

Hydronephrosis is the commonest abdominal tumor in children. Most palpable hydronephroses result from obstruction at the ureteropelvic outlet or in the upper ureter. Congenital stricture is the commonest basic lesion; yet anomalous vascularization with aberrant vessel obstruction is frequently seen. In the last group of cases, the kidney can be saved by early division of the vessels and restitution of normal drainage. In half of twenty-six such cases in children personally treated, the kidney was saved by division of the obstructing vessel. When the hydronephrosis results from ureteropelvic stricture, the outlook is less encouraging because complicating infection usually exists and because of this a technically satisfactory ureteropelvoplasty is often followed by ureteral sclerosis as severe or even more severe than the initial congenital stricture. Unfortunately in most of these cases at the present time the diagnosis is made so late that only nephrectomy offers hope of cure. When the hydronephrosis is due to peripheral obstruction (vesical outlet, urethra) relief of the blockage is commonly followed by a striking diminution in the size of the hydronephrosis and functional restitution to normal, although anatomic restitution to normal is rare.

Embryonal adenomyosarcoma of the kidney (Wilms' tumor) is the commonest malignant abdominal tumor in children. As a rule, the diagnosis of Wilms' tumor will be much more accurately made by retrograde than by excretory urography. When treated by nephrectomy alone the mortality is approximately 95 per cent; although Ladd reported a series in which 11 of 44 cases treated by surgery alone survived and in a personally treated series of 13 cases, in some of which irradiation therapy was combined with nephrectomy, there are four living three to nine years later. This tumor is so highly malignant that recurrence is usually evident within four months postoperative and the absence of demonstrable tumor after one year gives the child an even more favorable prognostic outlook than an adult apparently cured of carcinoma after five years. It is now our practice to employ intensive preoperative irradiation for two weeks, during which time approximately 1500 r units are given to the kidney region through anterior-posterior and posterior-anterior portals. This therapeutic course is followed in three weeks by nephrectomy and postoperatively we again employ deep irradiation. Most children can stand 150 to 200 r units per day, the dose being given through a portal at least 10 cm. square. In the diagnostic survey of these cases it is most important that roentgenograms of the pulmonary field be made to rule out metastases.

ANOMALIES OF THE EXTERNAL GENITALIA

These are particularly disturbing, especially when the condition is vesical exstrophy. When an anomaly of the external genitalia exists, an excretory urographic study should be made because in about one-third of the more marked genital anomalies, the upper urinary tract is anomalous. The commoner external genital anomalies include congenital stricture of the prepuce, phimosis, hypospadias, cryptorchidism, hydrocele and epispadias. Phimosis is treated by circumcision. Stenosis of the external meatus readily responds to wide meatotomy in the male; and in the female periodic progressive dilatation with sounds is employed. In the treatment of most cases of hypospadias we prefer the Ombredanne multiple stage operation since it requires no suprapubic counterdrainage and strongly advise the performance of the first operation to correct the congenital chordee by the age of twelve

months in order to permit unrestricted penile growth. The plastic procedure to construct the urethra to the glans is carried out when the size of the genitalia permits; this is usually after four or five years of age.

For the improperly descended testicle we recommend the Torek operation or one of its modifications. When there is no discernible coexisting hernia, hormone therapy should be employed and if there is no satisfactory result by the administration of 3000 units of the anterior-pitutiary-like hormone of pregnancy urine, operation should be performed without further delay. Yet in cryptorchidism it is notable that in three-fourths of the cases congenital hernia coexists and this condition makes the treatment surgical from the start. In unilateral lesions we advise operation by the seventh year; in bilateral cryptorchidism treatment should begin by the third or fourth year. It has been adequately demonstrated that the testicle thrives only in the cooler confines of the scrotum and that about ninety per cent of undescended testicles will be sterile at puberty. By observation of the above dicta, maximum testicular function can thus be preserved.

In the treatment of acquired hydrocele, open operation rather than aspiration or injection is advised and in congenital hydrocele only open operation should be considered. Vesical exstrophy is treated by ureterosigmoidostomy but only when the ureteral caliber is normal or nearly so and the anal mechanism functions normally. Although the mortality of ureteral transplantation to the sigmoid is likely to be between five and ten per cent or even greater, the miserable status of these patients without operation and the relief offered by successful operation surely justifies the risk. Without operation practically all are dead of renal infection by their twenty-first year and two-thirds by the tenth year.

UROGENITAL INJURIES

Renal injuries occasionally occur in children and are usually due to traffic accidents, falls or are received while sledding or engaged in other playing activities. If fresh bleeding continues for more than twenty-four hours, renal exploration should be performed without greater delay and much earlier if the condition of the patient so indicates. Yet an excretory urographic study can usually be made and will generally suggest whether urinary extravasation exists. Only through the early recognition of the traumatic lesion can conservative surgery be most satisfactorily employed. In some cases of partial renal maceration, resection of the severely traumatized tissue and renal suture will permit a good portion of the organ to be preserved. Yet under no circumstances should the patient be allowed to die while attempting to make a minute anatomic diagnosis or through undue efforts at conservative treatment.

BILATERAL RENAL DESTRUCTION

Renal Insufficiency: Bilateral renal hypoplasia is an extremely rare condition. Bilateral renal destruction consequent to unrelieved urinary blockage occurs sufficiently often to merit serious consideration; the obstruction may be bilateral supravesical or, as commonly observed, may be in the deep urethra or at the vesical outlet (congenital contracture of the bladder neck, congenital valvular obstruction, congenital hypertrophy of the verumontanum, urethral stricture, and so forth). Bilateral calculus disease, renal tuberculosis, chronic pyelonephritis and the various obstructive lesions cause a diminution in the total volume of renal secretory tissue and reduction in function of the remaining tissue. The end phase is renal insufficiency. This may or may not be accompanied by elevation of blood pressure but the diminished renal function is readily estimated by nitrogen retention studies of the blood and by the phenolsulphonphthalein excretion test. The establishment of free renal drainage and the eradication of infection offer the only hope for improving this depressed renal function. In its late phase the clinical picture of renal insufficiency is recognized as uremia, some of

the earlier symptoms of which are headache, drowziness, apathy, visual disturbances and, characteristically, an abnormal dryness of the mouth usually with great thirst.

Renal insufficiency is frequently accompanied by a marked increase in blood pressure. Recent studies, especially by Goldblatt, have indicated that in some cases of hypertension a kidney with reduced and/or sclerotic arterial supply may be the source of pressor substances released into the circulation to cause blood pressure elevation. In some instances these changes have been associated with increased intrarenal pressure due to obstruction at the pelvic outlet and with the establishment of free urinary drainage the blood pressure has promptly decreased. Several cases in children have now been reported in which the pressure returned to normal following the surgical removal of the unilateral diseased organ. I have recently observed this in an eight-year-old girl whose blood pressure of 218/140 promptly dropped to 140/100 following the removal of a congenitally hypoplastic left kidney.

RETARDED GROWTH

Renal insufficiency is frequently manifested by retarded growth and to this condition the name of renal rickets has frequently been applied; the patient is said to be a renal dwarf. In these cases the roentgenographic demonstration of rachitic and osteocystic skeletal changes in conjunction with the laboratory and clinical evidence of renal insufficiency makes the diagnosis. In some instances disease of the parathyroid gland has also been found and to this has been attributed the osteitis cystica so frequently observed in so-called renal rickets. The function of the kidneys and their morphology can readily be determined in the living by cystoscopic and pyelographic study. By the establishment of free urinary drainage with successful functional renal rehabilitation, striking improvement in growth is commonly noted. There is also marked improvement in alimentation. Yet many of these patients are so gravely ill at the time diagnosis is made and the pathologic changes irreversible, that treatment is fruitless. Uremic death completes the story.

This has been briefly considered under "Disturbances of Urination." Suffice it to repeat that when medical or psychic therapy fails to achieve the desired result during three to four months of intensive therapy, a thorough urologic examination should be carried out and especially of the lower urinary tract. In the absence of demonstrable pathology the physician can rest assured that no serious urinary tract disease is in progress and he can continue with his chosen remedy.

SPINAL CORD DISEASE AND SPINAL INJURY

These commonly cause disturbances of vesical function. Most of the children with this condition that I have seen were referred for urologic examination either because of urinary incontinence or persistent pyuria. Congenital spinal anomalies are readily demonstrated by roentgenogram and a neurologic examination is likely to show somatic changes. Yet the so-called cord bladder can exist when the neurologic examination is otherwise normal. The status of the urinary tract and, to a large extent, the bladder function can be easily demonstrated by excretory urography and the determination of the residual urine. An accurate diagnosis can usually be made by combined neurological and urological investigation. On the other hand, treatment is likely to be unsatisfactory and too often we must content ourselves only with the establishment of free vesical drainage by suprapubic cystostomy. Yet in some instances of spina bifida, satisfactory results have followed sacral laminectomy. I have observed this particularly in young children with spina bifida, suffering recurrent attacks of acute vesical retention and in the absence of obstructive lesions at the bladder outlet or in the deep urethra. In the vagotonic type of vesical retention, in which the cystometric observation shows a sympathetic imbalance or a parasympathetic hypotonia, the administration of acetylcholine compounds may be expected markedly to improve vesical emptying. By its administration I have seen a

bladder residuum of eight ounces promptly reduced to 5 cc.

The indications for urologic examination in children have been given together with a brief consideration of the more important clinical aspects of urologic disease in the young. It is important to note that general anesthesia is required in comparatively few children thus examined. An accurate diagnosis can be established only by adequate investigation and only by this approach can rational therapy be instituted. No instrumental examination should be performed without a precise indication; yet a tender age is no contraindication to the pursuance of a logical diagnostic and therapeutic attack. Moreover it is notable that cystoscopic reactions in children are of lower incidence and of considerable less severity than in adults. Treatment rests upon diagnosis and is precisely that employed when the patient is an adult.

MANAGEMENT OF CHRONIC ARTHRITIS*

By JOHN G. KUHNS, M. D.
Boston, Massachusetts

It is a privilege to speak to you about the most important crippling disease among chronic diseases, i.e., chronic arthritis. It is estimated by the Public Health Service of the United States that over three million people are crippled in various degrees by chronic arthritis. The loss in wages in the United States caused by this disease has been stated to be over half a billion dollars a year.

With a disease of so great economic importance it is worth while to review what has been accomplished as to its study and treatment. Much research has been carried out during the past twenty years. While no definite cure has been found for chronic arthritis, much has been learned about the nature of the disease and about measures which are helpful in its control. At the present time we know the pathology of the two great types of chronic arthritis. We also know something about the life history of the disease.

About ten years ago a group of interested physicians formed the American Rheumatism Association which now has over five hundred members. This organization has fostered the clinical and laboratory study of arthritis; it has published a number of pamphlets; it holds annual meetings with the American Medical Association. Its chief value has been its unbiased attempt to evaluate advances in our knowledge and to ascertain the value of treatments which are advocated for chronic arthritis.

THE AUTHOR

Dr. John G. Kuhns, graduate Johns Hopkins University School of Medicine; interned Children's Hospital, Boston; Assistant in Orthopaedic Surgery, Harvard Medical School, Boston Children's Hospital, and Boston Home for Incurables; Chief of Staff, Surgery and Orthopaedics, Robert Breck Brigham Hospital, Boston; Fellow American College of Surgeons.

The classification of chronic arthritis which is accepted at the present time is given in Table I. Arthritis is divided into two groups: Group I, in which the cause is known. Group II, in which it is not clearly understood. That group in which the cause is known does not need to be discussed further at this time. The remainder of this discussion will be devoted to the first two mentioned under cause uncertain, rheumatoid arthritis and osteoarthritis.

Rheumatoid arthritis causes more disability than any other chronic disease. It is sometimes called atrophic arthritis or proliferative

*Presented before West Virginia State Medical Association, 75th Annual Meeting, Huntington, West Virginia, July 15, 1942.

arthritis but rheumatoid arthritis is the accepted terminology in the United States at the present time. We recognize several subdivisions. The usual type is the one in which the peripheral joints are involved chiefly. The type in which the spine is involved primarily with occasional involvement of the hips and shoulders is called ankylosing spondylitis or Marie-Strümpell arthritis. We have been taught to recognize a third sub-

TABLE I—CLASSIFICATION OF ARTHRITIS

GROUP I.

Cause known.

1. Traumatic:
   - Sprain,
   - Contusion,
   - Loose body in joint cavity.
2. Infection:
   - Bacillus,
   - Spirochete,
   - Virus.
3. Neuropathic (Charcot's joint):
   - Tabes dorsalis,
   - Nerve injury,
   - Leprosy.
4. Metabolic:
   - Gout.
5. Constitutional:
   - Hemophilia,
   - Hysteria.
6. Allergic (serum sickness).

GROUP II.

Cause uncertain.

1. Rheumatoid arthritis:
   - Usual type.
   - Spondylitis,
   - Still's disease.
2. Osteoarthritis:
   - Usual type,
   - Spinal type.
   - Malum coxæ senilis.
3. Rheumatic fever.

type occurring in children, Still's disease, with enlargement of the liver and spleen and generalized adenopathy.

Osteoarthritis, sometimes called hypertrophic or degenerative arthritis, occurs chiefly in older people. This is sometimes called arthrosis since it is not an inflammatory but chiefly a degenerative process, a wearing out of the joint.

The chief differentiating points between these two types of arthritis are given in Table II. After the disease is well established the diagnosis can usually be made by means of the x-ray film. In rheumatoid arthritis there is gradual destruction of the joint and atrophy of the bone. In osteoarthritis there is usually no atrophy of the bone but spur formation is observed about the margin of the joint.

TABLE II—DIFFERENTIAL DIAGNOSIS

	Rheumatoid Arthritis	Osteoarthritis
Age	Children and young adults	Usually after forty-five
Habitus	Slender	Stocky
Onset	Usually gradual	Very gradual
Duration	Prolonged	Prolonged
Painful joints	Many	Few
Weight	Loss	Usually gain
Fever	Slight in early stage	Absent
Blood	Anemia	No change
Sedimentation rate	Elevated	Low
X-ray	Destruction of joint Atrophy of bone	Spur formation No change in bone
Deformity	Usually severe	Slight

In rheumatoid arthritis and osteoarthritis the pathological picture is quite different. In rheumatoid arthritis there is first a proliferation of the synovial membrane with panus invading the articular cartilage. This is followed by gradual destruction of the articular cartilage, atrophy of the bone and replacement of the trabeculæ with fat and fibrous tissue. Eventually there is deformity with destruction or ankylosis of the joint. In osteoarthritis the chief pathological change is degeneration, gradual wearing away of the articular cartilage. The repair of the cartilage takes place very irregularly and imperfectly. Most of the formation of new cartilage is found about the margins of the joint. Spurs are formed when this cartilage is changed to bone. By these proliferations about the

margins of the joint, motion is limited but ankylosis does not take place.

ETIOLOGICAL FACTORS—RHEUMATOID ARTHRITIS

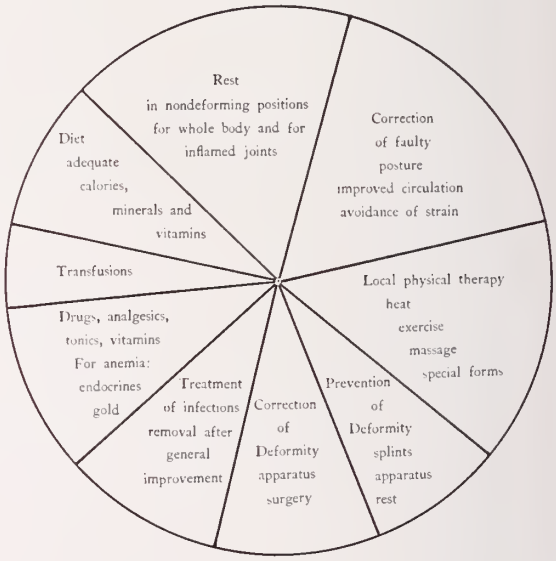
Before we discuss the management of chronic arthritis it is well to review briefly what we recognize as possible etiological factors. Table III gives what we consider the important factors in the development of rheumatoid arthritis. Most of these probably merely prepare the individual and his joints for arthritis, particularly an hereditary tendency, chronic fatigue, improper diet, emotional disturbances and local circulatory disturbances. Not only is a proper diet important but also its proper assimilation. Trauma plays a rôle in the localization of the disease. Faulty posture is important, particularly in that it causes strain and lessens the local resistance of joints, and also disturbs the function of various internal organs. A cold

TABLE III—CAUSES—RHEUMATOID ARTHRITIS

environment and a peripheral circulatory disturbance seem to hasten the onset of arthritis. Faulty elimination and endocrine disturbances are at times important etiological factors. We believe rheumatoid arthritis is initiated in most instances by infection in the body. It has not been demonstrated in what manner the infection affects the joint—whether it is invaded by bacteria, whether toxins of bacteria cause the inflammation, or whether the joint becomes sensitized to bacteria or their products.

Given this imperfect knowledge of the causes of rheumatoid arthritis how can we approach its treatment? It is a systemic disease with the inflamed joints as its most obvious manifestation. In most instances we cannot treat the infection in the joints but we can treat the resistance of the patient. We attempt first to find out everything that is

TABLE IV—TREATMENT—RHEUMATOID ARTHRITIS



wrong with the patient. We begin treatment here. By the time these faulty conditions are improved the general condition of the patient is usually much improved and the arthritis has often become inactive. The general treatment is outlined in Table IV.

TREATMENT

First in treatment comes rest of the entire body. It would probably be wise to give every patient with active rheumatoid arthritis a period of rest in bed when beginning treatment. This rest helps to quiet the inflammation in the joints, improves the general well-being of the patient and gives the doctor an opportunity to study the disease.

Diet is very important but there is no special diet for arthritis. If the patient is underweight he is given a high caloric diet; if he is overweight we attempt to give a diet

which will reduce his weight. Vitamins and minerals are emphasized in the diet. Milk or dairy products, meat of good quality, whole-grain bread and cereals and an abundance of fruit and vegetables are given. Extra vitamins are usually included in the diet. The elimination of the patient is studied to determine how well the diet is assimilated. A number of the older patients will have an achlorhydria. For these, small amounts of dilute hydrochloric acid with meals will aid in digestion.

TABLE V—CHRYSOTHERAPY

INDICATIONS:
- Active rheumatoid arthritis,
- More effective in early stages,
- After no response to usual therapy.

CONTRAINDICATIONS:
- Diseases of kidney and liver,
- Congestive heart failure,
- Agranulocytosis or severe anemia,
- Allergic history,
- Colitis.

DOSAGE:
- Small weekly dose 10 to 50 mg.
- Total dosage usually 1500 mg.

RESULT:
- Action unknown.
- Arthritis:
  - Decreased sedimentation rate,
  - Less pain and swelling,
  - Sometimes general improvement.
- Toxic reactions:
  - Skin lesions, purpura,
  - Blood decrease in leucocytes and platelets,
  - Gastro-intestinal irritation,
  - Renal damage,
  - Hepatic damage.

The correction of faulty posture is an essential part of treatment. Faulty posture causes strain because of resulting disalignment in the joint. Unless this strain is corrected the inflammation in the joint will not subside completely. The function of the internal organs, which are displaced by faulty posture, will also be improved when faulty posture is corrected. The peripheral circulation will also be improved because the diaphragm will have a greater excursion which will aid in the return flow of blood to the heart.

TABLE VI—VACCINE THERAPY

INDICATIONS:
- Active rheumatoid arthritis,
- No response to usual therapy,
- Presence or history of chronic infection,
- Skin sensitivity to organisms?

CONTRAINDICATIONS:
- Fever,
- Hypersensitivity,
- Quiet arthritis.

DOSAGE:
- 10,000 organisms every 3 to 7 days subcutaneously.

RESULTS:
- Difficult to evaluate,
- Psychic?

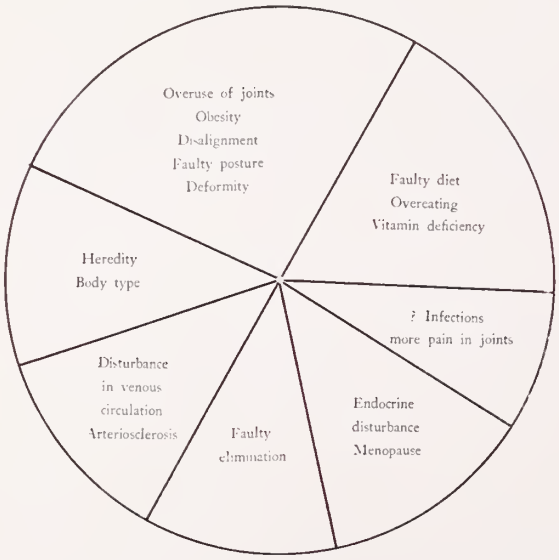
Transfusions of blood are sometimes given at intervals of from one to two weeks when the patient is anemic and the general improvement is very slow. The improvement from transfusions, however, is short-lived, and many other general measures must be employed to maintain the gains which are initiated by them. They are of great value in very ill patients and halt temporarily the progression of the disease.

Drugs take a minor place in the treatment of most patients suffering from chronic arthritis. If the inflamed joints are properly splinted and are not used excessively, there is usually not much pain. When there is pain, salicylates or acetylsalicylic acid are usually all that are required. Narcotics are almost never required. If a patient suffering from chronic arthritis requires narcotics daily, a search should be made for malignancy. The daily requirements of vitamins are usually higher in individuals with arthritis than those in normal individuals. Consequently, added vitamins are often necessary, particu-

larly the B complex, cevitamic acid and cod liver oil. Endocrine products are used only when there is evidence of their lack. Iron in an assimilable form is needed in almost all cases for the correction of anemia.

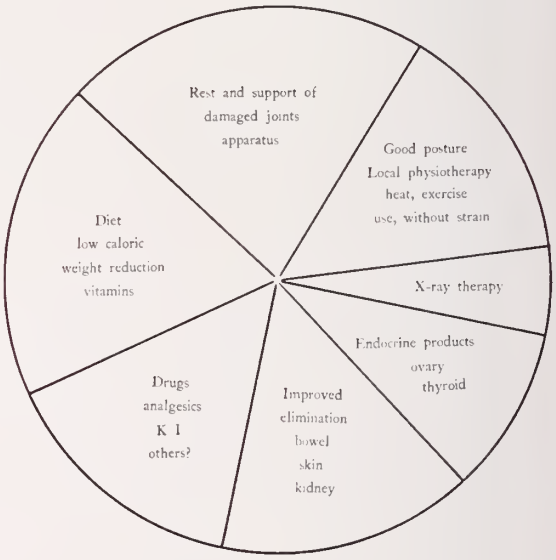
Infections, if present, are treated, as a rule, only by general measures until the patient shows some general improvement. We have found that removal of foci when the disease is active and the patient is ill, harms rather than benefits the patient. We usually wait until any fever has subsided, until the patient begins to gain weight and until the joints are less sore. At this stage foci of infection can be treated surgically without making the condition of the patient worse. Recently we have been using the sulfonamides for several days before removing foci of infection. This procedure has prevented temporarily an increase in soreness in the joints.

TABLE VII—CAUSES—OSTEOARTHRITIS



We shall discuss local physical therapy, the prevention of deformities and the correction of deformities more fully with the orthopedic treatment. Several special treatments much advertised in the therapy of chronic arthritis should be mentioned. Chief among these is chrysotherapy, or the use of gold. It is of value in certain patients who do not respond to the usual general measures. The indications and contraindications for its use are given in Table V. This type of treatment should be used only when the patient can be followed at frequent intervals with examination of the blood and urine. The dosage should begin at 10 mg. intramuscularly and should never be more than 50 mg. Toxic reactions are found most often when larger doses are given. There are a number of patients who do not improve under chrysotherapy.

TABLE VIII—TREATMENT—OSTEOARTHRITIS



Vaccine therapy is being employed much less than it was a decade ago. While final judgment cannot yet be made, our experience indicates that it is not of great value. If it is used it should be reserved for active rheumatoid arthritis after there has been little response to general therapy. Those who advocate vaccine therapy prefer to make an autogenous vaccine from organisms recovered from a focus of infection. Skin sensitivity to the bacteria in the vaccine has been suggested as an indication of its therapeutic value. The dosage should be small and should be given subcutaneously once or twice a week. (See Table VI).

In our experience, the daily administration of very large doses of vitamin D has led to no definite change in the arthritis. In a few

instances there was an improvement in the general condition of the patient. The use of large doses of vitamin D is not without danger. Injections of sulphur or iodine are of no known value. We have seen no benefit from their use.

ETIOLOGICAL FACTORS—OSTEOARTHRITIS

The accepted etiological factors in osteoarthritis are listed in Table VII. Probably the most important factor is overuse of the joint, which wears the articular cartilage more rapidly. Obesity and laborious occupations accelerate this process. Faulty posture and deformities which lead to disalignment in the articular surfaces are contributing factors. Faulty diet plays a two-fold rôle. Overeating leads to obesity. In addition, experiments suggest that lack of vitamins, particularly vitamin C, makes for more rapid degeneration of the cartilage. The use of vitamin B has been helpful in relieving the pain in certain cases of osteoarthritis. Osteoarthritis develops more frequently in individuals of stocky build. Arteriosclerosis and disturbances in the venous circulation have been suggested, partly on experimental data, as causative factors. Faulty intestinal elimination is a possible causative factor which was emphasized much more twenty years ago than it is today. Clinical observation leads one to believe that there is a relationship between constipation and pain in osteoarthritis. Endocrine disturbances, particularly at the menopause, seem to be associated with osteoarthritis. Infection probably plays no part in the development of this disease but pain in the joints is usually worse when infection is present.

TABLE IX—ORTHOPEDIC TREATMENT

GENERAL—WHOLE BODY:
- Rest in nondeforming positions,
- Exercise—postural,
- Improvement in circulation,
- Improved alignment of body.

LOCAL—AFFECTED JOINTS:
- Heat—moist or dry,
- Rest.
  - Splints:
    - Joints in good position for function,
    - Removed for short periods.

EXERCISE:
- Active—only in painless range,
- Assisted—to improve motion:
  - Only when joints are not inflamed.

OCCUPATIONAL THERAPY:

PREVENTION OF DEFORMITY:
- Spine,
- Upper extremity,
- Lower extremity.

CORRECTION OF DEFORMITY:
- Apparatus,
- Manipulation,
- Operations.

TABLE X
SPLINTING TO PREVENT DEFORMITY IN CHRONIC ARTHRITIS

Joint	Usual Deformity	Position of Splinting
Head and neck	Flexion, rotation	Full extension of cervical spine, chin forward
Dorsal Spine	Flexion, flat chest	Full extension,
Shoulder	Adduction	90° adduction
	Internal rotation	Neutral rotation
Elbow	Flexion, pronation	90° flexion, 10° supination
Wrist	Palmar flexion	30° dorsiflexion
Thumb	Flexion	Extension, apposition
Finger	Flexion, ulnar deviation	Extension, no lateral deviation
Hip	Flexion, adduction, external rotation	Extension, slight adduction, neutral rotation
Knee	Flexion	Extension
Ankle	Plantar flexion	Right angle to leg
Foot	Valgus, spread of forefoot	No varus or valgus. Pressure behind second, third and fourth metatarsal heads
Toe	Flexion	Extension

TREATMENT

In the treatment of osteoarthritis we attempt first to correct the mechanical factors which are present. The pain in osteoarthritis is usually the result of ligamentous or muscular strain about the joints in which motion is limited by spur formation. Rest and support of the damaged joints usually relieve symptoms quickly. In order to remain comfortable many of these patients must wear some support about their joints for the remainder of their lives. Proper diet with reduction of excess weight is helpful.

Local physiotherapy and postural correction will be discussed later. There are no

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special drugs for osteoarthritis. Potassium iodide is sometimes advocated. Vitamins, particularly the vitamin B complex, are sometimes helpful. Endocrine products should be given if the patient shows evidence of such lack. Proper bowel elimination should be encouraged by proper hygiene and diet rather than by laxatives. Special treatments, e.g., chrysotherapy or vaccine therapy, are not of value in osteoarthritis. X-ray treatment is helpful in relieving pain, particularly in the aged.

ORTHOPEDIC TREATMENT

In addition to the general medical treatment of the patient, attempts should be made to prevent and to correct deformities and to recover function. This we call the orthopedic treatment. The principles are the same in both rheumatoid arthritis and in osteoarthritis, Table IX. Only the simple measures which all physicians can apply will be described. The patient should rest in bed in positions which will not add to the deformity. The patient, when in bed, should be flat on a firm bed with only one pillow under the head. The position in bed should be changed frequently. When the patient is allowed to sit up partially, and when pillows are placed under the hips and knees for long periods, deformities at the neck, shoulders, back, and lower extremities can occur very quickly. While the patient is in bed, exercises to improve the posture should be given. Such exercises tend to improve the peripheral circulation and make for better alignment of the whole body.

Heat in the form of a hot pack to the entire body helps greatly in relieving pain. It should not be used, however, in debilitated patients. Light, such as sunlight or ultraviolet light, is a good tonic measure. Hydrotherapy (tank treatment), is useful in regaining motion as the joints become less sore. Heat is usually applied to the inflamed joints for thirty-minute periods three times a day. Moist heat in the form of hot fomentations and dry heat from a baking lamp are probably the most practical forms. The inflamed joints are splinted for comfort in a nondeforming position, or the closest approach to this which can be obtained. Pillows and sand bags can be used temporarily until more effective splints are obtained. Plaster of Paris casts are the simplest and most satisfactory splints. The splints are worn all of the time except while eating, as long as there is pain and spasm in the joints on motion. By the use of splints until muscular spasm subsides, pain is relieved and deformity and damage to the joint are often prevented. Exercises are given to the affected joints in order to preserve motion and to prevent muscular atrophy. The patient is encouraged to use the limb only through that range of motion which does not cause pain. With such measures there is a gradual increase in the painless range of motion. Painful attempts to force movement usually lead to greater stiffness of, and more damage to, the joints. Assisted exercises in which the patient attempts to move the joint, and assistance in this movement is given at the same time by someone else, are used only when there is no evidence of inflammation in the joint.

Occupational therapy is useful in preserving and recovering motion in the joints. Basketry, weaving, leather and woodwork are the most common forms. There is the added incentive of building morale, for the patient can see what he is accomplishing. There are types of occupational therapy easily adapted to disabilities in both the upper and lower extremities.

The positions in which to apply splints to prevent deformity are given in Table X. These positions are the same as those which are recognized to be the most useful for function when stiffness of the joint is expected. Usually, however, stiffness is prevented by their use. In no instance have we observed increased stiffness in the joint from prolonged splinting. Usually, muscular spasm subsides after the splint has been applied, pain disappears and motion in the joint increases.

For correction of deformities which have already occurred, Plaster of Paris splints are our most common form of treatment. The splint is applied in the best position that can be obtained. (See Table X). In from one to two weeks a second splint is applied, getting a better position of the joint than was obtained in the application of the first splint. The splints are replaced as often as correction is obtained in the deformed position of the joint. Splints are no longer used when full correction is obtained and the patient's muscles are strong enough to maintain the correction.

When several plaster splints have failed to obtain any correction in a deformity, we consider more vigorous means of correction. If the arthritis is quiescent, i.e., if the sedimentation rate of the blood is normal and there are no clinical signs of inflammation in the joint, a manipulation under anesthesia may be attempted. Manipulation is carried out slowly with short leverage, as arthritic bones are easily broken. After manipulation the limb is splinted in the corrected position and heat is applied. Exercises and use are begun the following day unless there is much soreness.

OPEN OPERATION

When great contracture of muscles and ligaments has taken place, correction can rarely be obtained by casts or by manipulation. Traction on the extremity is usually ineffective also. Here the common practice is to lengthen the contracted ligaments and muscles by open operation. When the joint is ankylosed, one of two procedures may be followed. These are osteotomy and arthroplasty. An osteotomy simply brings the limb into a more useful position for function but does not give any motion in the joint. An arthroplasty attempts to obtain movement in the stiff joint. Any operation in chronic arthritis should be performed only when the disease is quiescent. Arthroplasties are more frequently successful in the upper extremity than in the lower.

Through the use of these measures which have been outlined, chronic arthritis can slowly be brought under control. Cure is never certain but most of the patients will remain well. When the arthritis becomes quiescent, the patient, if he lives within his physical limitations and practices good hygiene, particularly in regard to work, rest, posture and diet, will usually have no further exacerbation of the arthritis. We find that 80 per cent of the patients disabled by chronic arthritis return to a gainful occupation and most of them have no further trouble. However, any fault in hygiene, any dissipation, or any severe acute infection may lead to a recurrence of the active arthritis. For this reason any individual who has had chronic arthritis should be examined by his physician at least several times a year in order that his life may be guided properly and any faults corrected before they lead to a further attack.

SUMMARY

Chronic arthritis is responsible for more crippling in the United States than is any other chronic disease. We recognize two great types of chronic arthritis, rheumatoid arthritis and osteoarthritis. The symptomatology, appearance in x-ray films, and pathology of these two types are distinct and can usually be differentiated without difficulty. The factors which are recognized to be of etiological importance give us a program for therapeutic approach. An attempt is made to discover in the patient, all physiological deviations from what is considered normal. An attempt is then made to correct whatever is found to be wrong. In this manner health is improved and, concomitantly, the arthritis becomes quiescent. Gold therapy is sometimes of value. While the patient is recovering, the joints must not be forgotten. Through proper orthopedic measures deformity can be prevented. When deformity has already occurred, it can be corrected by apparatus or through surgical intervention. When the arthritis becomes quiescent it tends to remain so unless there is a chronic impairment in the general health of the patient.

RECENT DRUG DEVELOPMENTS*

By GORDON A. BERGY
Morgantown, West Virginia

It is the object of this paper to present some of the newer biologic and chemotherapeutic agents designed for specific pharmacologic action or for the control of infectious diseases.

The principles of biological therapy rest upon a few relatively simple facts. The resistance of the body to disease, while very complicated if examined in all its details, depends in most instances primarily on the presence in the blood of certain specific globulins which one may call antibodies. A person seldom suffers more than one attack of a disease such as scarlet fever. As a result of this first attack, antibodies specific against scarlet fever have been formed, and the individual has established resistance but only at the expense of an actual attack of the disease with its concomitant risks of permanent injury or even death. It long has been the dream of immunologists to insure protection against all infectious diseases. One may inoculate individuals with the agents producing disease, either dead or in modified and avirulent form, and cause these individuals to respond to the injection with the formation of specific antibodies, as typhoid or paratyphoid, without experiencing an actual attack of the disease. Such an inoculum is called a vaccine and the condition it produces, which is usually of considerable duration, is called active immunity. On the other hand one may administer to a person recently exposed to or actually suffering from a certain disease, antibodies to the disease prepared in an animal of either homologous or heterologous species. Such treatment, called serum therapy, produces passive immunity and is transient. At best it is an emergency treatment and must be repeated on the occasion of subsequent exposures.

*Presented before Monongalia County Medical Society, Morgantown, West Virginia, September 8, 1942.

THE AUTHOR

Graduate College of Pharmacy, University of Michigan; Professor of Pharmacy, West Virginia University, 1916 to date; American Chemical Society; American Pharmaceutical Association; Member Subcommittee External Preparations of the National Formulary.

One of the most frequent and most fatal infections in all wars of modern times has been tetanus. In World War I, the only measure of protection was the prophylactic administration of tetanus antitoxin administered after a wound had been received. In spite of the widespread use of tetanus antitoxin the mortality was considerable. At that time tetanus toxoid, used for active immunization against tetanus, was unknown. Successful immunization of man with tetanus toxoid was first described in 1933, and these early indications of its value have been confirmed in the present war by the experience of the British Army. In the evacuation of Dunkirk by the British, all of the English troops wounded had not been immunized with tetanus toxoid, but a sufficiently large proportion had been so immunized that only one out of every two thousand developed tetanus as contrasted with sixteen in two thousand under comparable conditions in the previous World War. Particularly striking was the fact that not a single case of tetanus occurred in the troops actually immunized with tetanus toxoid. Because of these results, the personnel of the United States Navy is being immunized with alum precipitated toxoid and the entire Army of the United States will be immunized with plain tetanus toxoid. Furthermore, it has been found that by the use of tetanus toxoid it is possible to immunize horses and mules completely against infection. Monnier and Lebasque

state (Rev. D'Immunol. 4:405, 1938) that of sixteen thousand five hundred horses immunized with tetanus toxoid over a five year period not a single animal developed tetanus while in the previous five-year period at least one of every three hundred thirty contracted tetanus and out of every four hundred forty horses one died of tetanus in spite of the use of antitetanus serum.

INFLUENZAL MENINGITIS

This condition, particularly affecting infants, is an exceedingly fatal disease for the very young. Prior to the use of serum, ninety to one hundred per cent of children contracting the disease usually died and in very young children the mortality closely approached one hundred per cent. Seventy per cent of the cases occur in children under two years of age. Influenzal meningitis bears no relation to the clinical condition known as influenza but is caused by a bacterium known as Hemophilus influenza type B, while influenza is due to a filterable virus. In 1939, Dr. H. E. Alexander described an antiserum prepared in the rabbit against this organism which she used with encouraging results in the treatment of influenzal meningitis. Following her work, the use of antiinfluenzal meningitis rabbit serum has reduced the mortality from ninety to ninety-five per cent in untreated children to approximately thirty per cent.

Whooping cough is one of the most fatal diseases of infancy, particularly in children under two years of age, but the use of vaccine has made it possible to protect a large percentage of children against this disease. In 1933, Sauer (J.A.M.A., 100:239) reported success in the immunization of children with a pertussis vaccine prepared from recently isolated strains. In 1939, Kendrick and Eldering (Am. J. of Hyg., 29:123, 1939) reported the results of a carefully controlled study in pertussis immunization carried out for five years. They established the value of their vaccine and obtained their most striking result in the protection of children exposed to other cases of whooping cough in the family. When exposed children had not received injections of pertussis vaccine, eighty out of one hundred contracted the disease while of the exposed children who had been immunized, only seventeen out of one hundred contracted the disease and of the seventeen cases, six were mild and non-whooping cases which ordinarily would not be diagnosed as whooping cough. As a result of these studies whooping cough vaccine is being used more and more. At least one state and one major city are supplying whooping cough vaccine for immunization of all of the children in the same way that toxoid for immunizations against diphtheria and vaccine for vaccination against smallpox are being supplied. The present trend would indicate that within a few years immunization against whooping cough may be just as common as immunization against smallpox.

SCARLET FEVER

Greater attention is being given to the routes of immunization of biologic products, other than the injection methods. Several investigators have used the nasal route for active immunization. Recently, Frazer, Davy and Helpern (Can. Pub. Health, J., p. 376, August, 1940), have reported success in using a highly concentrated diphtheria toxoid dropped in the nose as a means of regaining immunity. They found that eighty-three per cent of individuals who had been actively immunized several years previously showed a definite increase in the antitoxin content of their blood after intranasal administration of concentrated toxoid. A reimmunization procedure which does not require injection will appeal to all children and not a few adults who do not like hypodermic needles. Another example of a new use requiring a changed product is the use of dried scarlet fever toxin made into tablets for peroral immunization against scarlet fever. In December, 1940, Dick and Dick (J. A. M. A., 115:2155, 1940) reported success by such a method in rendering susceptible individuals immune to scarlet fever. They found that one hundred and two persons receiving toxin tablets rang-

ing from forty-seven to ninety-one million skin test doses distributed in graduated amounts over a period of from two to three weeks were rendered ninety-four and seven-tenths per cent Dick negative.

TYPHOID FEVER

Another new method of use for an already well-established biologic product is shown by the adoption in the army of intradermal injections for reimmunization against typhoid fever. Longfellow and Luippold (Am. J. of Pub. Health, 30:1311, 1940) reported that revaccination with a single dose of 0.1 cc. of typhoid vaccine, intracutaneously administered constituted a reliable method of renewing immunity to typhoid fever and should be the method of choice. The recommended procedure for immunization in the army is to give the usual standard course of three subcutaneous injections of typhoid vaccine and then reimmunize every one or two years with an intracutaneous injection of 0.1 cc. of vaccine. One of the great advantages of revaccination by this effective method is that severe reactions with the intracutaneous injections are extremely rare. Tuft (Am. J. of Medical Sciences, 199:84, 1940) recommended that the intracutaneous method of immunization be used for primary as well as reimmunization. He suggests giving intracutaneous injections of 0.1 cc., 0.15 cc. and 0.2 cc. of the ordinary typhoid vaccine at weekly intervals for the primary vaccination.

Another definite trend in biologic products is the use of combined preparations for immunization against more than one disease with a single course of injections. For some time the French have been using tetanus toxoid combined with typhoid-paratyphoid vaccine, and MacLean (Lancet, No. 6115, p. 581, 1940) found that the combination of tetanus toxoid with typhoid-paratyphoid vaccine was a better immunizing agent against tetanus than tetanus toxoid alone. It was found that two injections given a month apart were effective. All of the soldiers in the Italian Army are being immunized with a mixture of tetanus toxoid and typhoid vaccine. Along this same line the following recommendation was made in March, 1941, issue of War Medicine*: "Since tetanus toxoid has been satisfactorily combined with diphtheria toxoid and with typhoid-paratyphoid vaccine with no greater reaction than if each were employed singly, this combination deserves universal adoption as a means of producing immunity to diphtheria, tetanus and the typhoid-paratyphoid group."

Still another trend in the improvement of biologic products is the preparation of toxins and toxoids with a minimum amount of foreign or nonspecific proteins. Mueller (J. of Immunol., 37:103, 1939), described a method for preparing diphtheria toxin on a medium free of peptone or meat extract. The toxin on this medium was from two to three times more potent than that obtained on the usual peptone-meat-extract medium.

Mueller and Miller (Proc. Soc. Exp. Bio. & Med., 43, 389, 1940), also reported success in growing tetanus toxin of high potency on a similar medium containing no peptone or meat extract. There has recently been reported success in preparing a highly potent scarlet fever toxin, free of demonstrable protein, on a medium free of peptone and meat extract. The advantages of these preparations are two-fold. First, the potencies of the toxin are higher than the average potency heretofore obtained and, second, the toxins are much purer and so may cause fewer undesirable reactions when they are injected for active immunization against their respective diseases. These preparations represent a long step toward the ideal of immunization with the pure antigens.

VIRUS DISEASES

There is another large group of transmissable diseases which are commonly referred to as the "virus diseases" and which are now being intensively studied in many laboratories. Specific therapy of virus diseases at the present time lags far behind that of diseases due to bacteria. The almost unbelievable success which has recently been obtained in the chemotherapy of bacterial

diseases unfortunately has not been duplicated with viruses, with the exception of lymphogranuloma venereum, trachoma and inclusion blenorrhea. The very biological principles on which virus infection rests make it difficult, if not impossible, to treat virus diseases once they are established in the body. The incubation period for such diseases is long and, to outward appearances, uneventful. During this silent period the virus in question settles down and multiplies in the very cytoplasm of the live cells. Once safely within this cytoplasm it is, as far as we know today, safe from all chemotherapeutic or other attack. Yet in all cases symptoms do not appear in virus diseases until the agent is firmly established within the specific cells which it attacks. Treatment at such time will, therefore, not effect any virus except that which may be liberated from such cells as are destroyed during the course of the infection. All efforts at biological control must, therefore, be directed at prevention. In most cases prevention is attempted by means of active immunization carried out before exposure to the disease, but in certain instances, notably rabies and measles, prevention or at least modification of the disease is possible after the initial infection but before symptoms appear. Recent advances in this connection are in the nature of the improvement of the existing prophylactic weapons rather than the invention of new ones. With regard to rabies, it has been shown by Webster in an extensive series of experimental studies that improvements of the vaccine at present available can be obtained if material containing very high initial titres of virus be used in preparation and, if further, the present methods for inactivation of the virus be replaced by one in which inactivation is carried out by ultraviolet radiation.

The use of a globulin fraction, obtainable from normal placenta, in the prevention and modification of measles in children who have been exposed to the virus is nothing new. However, the use of this readily available biological agent has been lessened because on the one hand methods of standardization of potency of the product have been lacking, and because preparations of immune globulin previously available have been of considerable toxicity and have produced such unpleasant reactions that the use of them in pediatric practice has often seemed inadvisable. Recent advances have rid the preparations of immune globulin of the toxic action while maintaining full activity, and preparations now available give less reaction than do many preparations of convalescent or adult serum, the other available prophylactic tools. Though it is still impossible to titrate preparations of immune globulin directly for antibodies to the virus of measles, it is now possible to titrate for other viral antibodies which it is hoped, in large enough pools, will give a sufficiently close answer as to the potency of a given preparation in measles antibodies. * * *

Attempts to obtain vaccines of value in prophylaxis against influenza are at present being made in different laboratories but no clear cut success has as yet been obtained. * * *

Major advances in the prophylaxis of influenza may well occur as a result of the studies now in progress. * * *

CONCLUSION

The brief review of the recently available methods of biotherapeutic and biochemotherapeutic agents for the control of infectious diseases indicated new fields of adventure. With few exceptions these products do not approach the marvelous results achieved in the treatment of certain bacterial diseases by the various sulfonamide derivatives, such as sulfanilamide, sulfapyridine, sulfathiazole, sulfadiazine, and sulfaguanidine. While the sulfa agents have largely displaced therapy in certain infections by specific antitoxins and sera, it must not be forgotten that prophylaxis even more than therapeutics still depends upon biologic agents which contain specific antigens. The direct chemical synthesis of specific antigens may prove a fertile field. * * *

REPORT OF THE STATE NUTRITION COMMITTEE*

By J. LEWIS BLANTON, M. D.
Fairmont, West Virginia

THE State Nutrition Committee was organized a year ago following the National Conference on Nutrition in Washington. Our state committee is composed of representatives from the federal and state agencies and all of the other organizations in the state that are in any way related to nutrition. We have twenty-four members in all, composing the West Virginia Nutrition Committee.

The main purpose of the committee when it was organized was to get reliable nutrition information to everyone and this educational program has been carried forward by all means that were available to us. All methods of publicity, including the newspapers, the weeklies, the radio, and public addresses, have been utilized. We have organized county committees in every county in the state and these committees have been actively functioning in the great majority of instances. These county committees have been training workers who are going out into their various communities and spreading reliable nutrition information.

Our second purpose was to improve the nutrition work in our schools. We found early in our survey that the nutrition information being given in the schools was not up to standard, according to modern information on nutrition. This has been changed so that the schools today are receiving correct nutritional knowledge.

We also found that the lunches being served in the schools were more of an income-producing type, namely, coca-cola, other soft drinks and candy, rather than such as would provide nutrition for the children. This, too, has been investigated and in the great majority of cases the schools of West Virginia are serving now a balanced meal to the students.

THE AUTHOR

J. Lewis Blanton, graduate Medical College of Virginia; interned Hazelton State Hospital, Hazelton, Pa.; postgraduate, Harvard Medical School; Fellow American College Physicians; American Board of Pediatrics; Cook Hospital Staff; at present Major, M. C., Station Hospital, Camp Carson, Colorado.

In addition, through the efforts of West Virginia University, a very interesting survey has been made of the food situation in West Virginia. I have jotted down on the blackboard some of the things that have been brought to our attention.

The first column represents the food that West Virginia produces. The second column represents what we are consuming. The third column represents what we should consume according to the newer nutrition knowledge that we have today.

You will notice that under the first item, wheat, we are consuming a large amount, much more than we actually should consume, according to the nutritional standards that have been set up. This wheat is refined flour that has been robbed of its vitamins and if we are not recognizing vitamin deficiency in West Virginia, it is either appearing in a subclinical form or we are overlooking it.

We think of West Virginia as being a producing state agriculturally, namely, dairy products, beef and potatoes. You will notice from this chart that we are consuming much more than we are producing. In dairy products we are consuming more than twice as much as we are producing and still are not consuming enough, according to the standards that have been established. The same thing applies to eggs, likewise to beef, in

*Presented before the West Virginia State Medical Association, at its 75th Annual Meeting at Huntington, July 13, 1942.

spite of the fact that West Virginia is a beef-producing state.

West Virginia has the reputation of growing more vegetables for home use than any state in the Union and yet I call your attention to the figures under vegetables. We are now consuming about twice as much as we are actually producing, and we need about three times as much as we are actually producing, which shows that West Virginia is capable of producing these various food needs but we have not, up to the present time, stepped in and helped organize this work.

Following up this survey that the University made, we have put on a very active campaign to increase the production to correspond to our consumption as nearly as possible. This has gone along in the form of the Victory Garden program, and the Food Conservation program, the latter of which is a follow-up of the Victory Garden program. These organizations have conservation centers established throughout the State of West Virginia to train people how to conserve the food that they are producing.

The Agricultural Department of West Virginia has also actively gone into the work of increasing the production of cattle, eggs, chickens and other food products that we can grow in the state.

This is not only a problem of production and consumption but it is also a problem of transportation. It has been estimated that the average individual eats one ton of food per year and if we can eliminate the transportation of the food products that we are now importing, more room will be left for the transportation of oil and other materials by the overtaxed transportation system.

There are other problems which have been brought to light. For instance, changing the food habits of individuals or families. People have been accustomed to eat in certain ways, and it is exceedingly hard to change their food habits. You men can help a lot in this regard. We must have your active support to carry out the program that is before us.

As we foresee some of the problems that will face us, there is a possibility that we may have to work out the problem of substitution of essential food factors. We have already a transportation problem in bananas which are becoming hard to procure in many instances. Fortunately, we don't have to eat bananas but if that same problem should arise concerning fruits, we men will have to step in and help to provide substitutes for vitamin C. There may be other substitutes that will have to be provided as we go along.

Another problem that is coming to the front very rapidly is that of food in industry. In England, every factory employing two hundred and fifty or more people is required to provide facilities for one meal a day at the factory. Ninety-four per cent of the miners in England are receiving a well-balanced meal at the place of employment. This has been brought about by the knowledge that whereas individuals who are receiving a diet deficient in certain factors will have increased illnesses, and increased accident rates; when this deficiency is corrected by a well-balanced diet their output and efficiency are increased without any apparent extra effort on their part. Whether or not we shall actually get into that in our mining fields remains to be seen, but certainly some of the larger industries in this country are providing facilities for a well-balanced meal and you men can help us get the idea across by urging people to eat the foods that are good for them.

I hope you will get behind this nutrition program. We think it has the possibility of accomplishing a great deal in our state.

Looking Ahead Fifty Years

Some diseases prevalent today should be nearly wiped out within the next fifty years. Syphilis, for example, should become as rare as smallpox. The secret of preventing and curing cancer will probably be known. Great advances will have been made in treating mental cases, both by surgery and psychological methods. But with airplanes making the world smaller, physicians will have to combat diseases spread on a worldwide scale.—*Pathfinder.*

The President's Page

The Legislative Committee has met several times and studied the various proposed bills that are to be presented to the Legislature. In view of the controversial nature of some of these bills, I asked that a meeting of the Council be called for January 21, so that the members of this representative body could further study proposed legislation and give both the Legislative Committee and the profession in West Virginia the benefit of their mature judgment and advice.

No doubt you are familiar with the bill that has been prepared for introduction in the Legislature by the Insurance Commissioner, whereby hospital and medical service plans are legalized and allowed to function as tax free nonprofit corporations. In studying this bill we find that it protects hospital service plans by reason of making them tax free and eliminates the danger of individually operated plans that might not have the facilities for service. Likewise, the public is safeguarded against excessive charges and assured that the participating hospitals are equipped to render adequate care. The portion of this bill that deals with medical service plans fails to provide physician control but rather leaves the field open for any lay group to organize and operate such a plan regardless of the qualifications of the professional staff.

I am quite sure that approval would not be given by those now in authority at the State Insurance Commissioner's office unless endorsed by a group of qualified physicians, but there is no safeguard against the action of an Insurance Commissioner who might hold office in the future.

Notwithstanding the decision of the Supreme Court, wherein the American Medical Association and the District of Columbia Medical Society were found guilty of obstructing trade as outlined in the Sherman Act, it is my judgment that the profession can legally organize a medical service plan so long as all legalized or recognized practitioners are allowed to participate.

Those of us who have studied the question of the distribution of the cost for the low income group are persuaded that the ideal way to solve this problem is through the medium of medical insurance, and perhaps the best way to accomplish this is by a medical service plan sponsored by local medical societies and open to all the physicians. A medical service plan cannot be construed as inviting socialized medicine. On the contrary it is a safeguard against this very thing because the men who are now supporting contract practice by monthly deductions might desire an affiliation with a medical service plan that gives them a choice of physician.

I shall ask the Council to authorize the appointment of a planning committee whose duties will be a painstaking study of our Tuberculosis and Mental Institutions.

Granting that this committee will be appointed, the question has arisen whether or not the matter of medical service plans should be included in this study. Personally, I see no need for this inasmuch as the Committee on Medical Economics after an exhaustive study of the matter submitted a favorable report at the 1942 meeting of the State Association, and the plan as outlined was unanimously adopted by the House of Delegates.

The report of the action of the Council will appear in this issue of the JOURNAL and I hope you will take time out to read this report and give your wholehearted support to the legislative program that is adopted.

The time has arrived for the medical profession to recognize the importance of providing some type of medical insurance for the low income group. I am willing to abide by the mature judgment of our Council dealing with this and any other problems that may arise during my administration. Now is the time for a united front.

R. Swanson

West Virginia Medical Journal

Official Journal of
The West Virginia State Medical Association
302 Atlas Bldg., Charleston, West Va.

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Published monthly on the first day of the month, at Charleston, by The West Virginia State Medical Association.

Original articles are accepted on condition that they are contributed exclusively to the Journal.

Advertising rates furnished upon request. All advertisements must conform to the standard established by the Council of Pharmacy and Chemistry of the American Medical Association.

Address all communications to Business Manager, West Virginia Medical Journal, Box 1031, Charleston, West Va. Phone, Capitol 34-625.

SUBSCRIPTION $3.50 PER YEAR

Entered as second-class matter, January 1, 1926. Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917. Authorized July 24, 1919.

MEDICAL MEETINGS TO CONTINUE

The uncertainty that has existed concerning the right of West Virginia doctors to use their cars for the purpose of attending meetings of county and area medical societies has been cleared away by a definite ruling from the OPA. Doctors may use their Basic A ration books for this purpose.

In view of this ruling, there will be no necessity for the postponement or abandonment of meetings for the duration. This is most important from the viewpoint of the members of the State Association, as it means that meetings can now be held as planned.

The inability of some of the societies to obtain speakers for meetings resulted in the adoption by the Scientific Works Committee of a method by which it is hoped that speakers can be assigned, upon request, for service at all future meetings of the various component societies. Lists of doctors available as speakers have been compiled and the zone chairmen have already been instrumental in assigning speakers for some of the meetings held in December and January.

While other difficulties may be experienced in arranging regular meetings, the fact remains that the two big problems that threatened to cause the abandonment of such meetings have been solved. We venture again to express the hope that all societies will continue to hold their regular meetings.

SCIENTIFIC PAPERS NEEDED

The need for scientific papers for the JOURNAL becomes more urgent month by month. The time has come when the members of the State Association will have to be called upon to supply many more papers than in the past.

There has no doubt been a great deal of hesitancy on the part of the members to prepare papers for delivery before their home societies or a society in a neighboring county. Some have probably felt that they were not equal to the occasion. Others have felt that their knowledge of some certain subject was too limited to justify the expression of their views before their confreres. They have figuratively hidden their light under a bushel. It is another case of "Acres of Diamonds."

The JOURNAL feels that it is the patriotic duty of every member of the Association to respond to this call. If there is a subject about which a member has some special knowledge, and if he is capable and qualified to present the matter before a meeting, or if there is an interesting or unusual case report that can be written up for publication, then it is earnestly hoped that those who are in a position to alleviate this shortage in scientific material will respond promptly.

Margaret Fuller, author of "*Woman in the 19th Century*," once wrote, "If you have knowledge, let others light their candles by it." This advice can well be heeded today. Doctors should be willing to pass on to the other members of the profession any special knowledge they may have in the field of medicine and surgery.

The need for papers on diversified subjects was never greater. The aid of members is urgently solicited. A hearty response will be most gratifying.

SPECIAL ASSESSMENT FOR 1943

The special assessment of ten dollars levied last July by the House of Delegates against each member of the West Virginia State Medical Association is being paid promptly along with the regular dues. It is generally understood that the assessment is necessary to meet a deficit caused primarily by reason of the fact that no dues are being collected from members who are serving in our armed forces, and members who remain at home are cheerfully meeting this extra obligation.

The operation of the State Procurement and Assignment service in 1942 entailed a heavy expense, but since West Virginia's quota was supplied and greatly exceeded, the work of the committee has slowed down considerably, and expenses directly chargeable to this special service should be negligible for the remainder of the year 1943.

FOUR-YEAR MEDICAL COURSE

The bill making possible the establishment of a four year course in medicine for students at West Virginia University has been introduced in the legislature. The bill anticipates that the first two years of a medical course will be given at the University, as in the past, and the third and fourth years at some medical school outside the state.

Inasmuch as it seems next to impossible at this time for West Virginia to so much as consider the construction, operation and maintenance of a four-year medical college, the arrangement provided for under the terms of the bill is undoubtedly the ideal solution for our problems of medical education.

The medical school with which it is thought that satisfactory arrangements for the enrollment of our students can be made is the Medical College of Virginia, at Richmond. The authorities there have tentatively agreed to the enrollment of twenty West Virginia students each year. After the first year, forty of our students would be enrolled there for the third and fourth years of the course. The diploma would show that students from this state are graduates of both West Virginia University and Medical College of Virginia.

The bill provides that no student shall be eligible to take the course unless he has been a bona fide resident of West Virginia for at least five years, has completed the medical course provided at the University, and has been chosen for the purpose by the president and faculty of the College of Medicine at the University.

The bill, which has been endorsed unanimously by the members of the Legislative Committee of the West Virginia State Medical Association, merits the support of all the members of the Legislature.

THE PREMEDICAL STUDENT

The problem of medical education and a continuous flow of medical graduates during the period of the emergency appears to be practically solved. The acceleration of the curriculum was begun last July in practically all medical schools, and the deferment of medical students within the draft age was accomplished by commissioning them in the Medical Administrative Reserve. The premedical student, however, has been the source of much concern, but his status has now been clarified by a bulletin issued by General Hershey under date of Dec. 14, 1942. We quote:

"A registrant who is in training and preparation as a premedical * * * student, pursuing courses in liberal arts or sciences in a recognized university or college, may be considered for occupational deferment after completion of his first academic year in such preprofessional course, and thereafter if he is a full time student in good standing, if he continues to maintain good standing in such course of study and if it is certified by the institution that he is competent and that he gives promise of successful completion of such course of study and acquiring the neces-

sary degree of training, qualification or skill."

This would apparently take care of those "premedics" who can convince the institutions in which they are matriculants that they are able to carry on in medicine. Also we have information to the effect that a plan is being considered under which medical students in good standing, and premedical students coming within the above classification, will be actually inducted into the armed services and assigned to the institutions in which they are matriculants "for training." At this date (Jan. 18), however, no such announcement has been made by the Federal Government.

A CAR IN EVERY GARAGE

It hasn't been too long ago for most of us to remember the battle cry, "a car in every garage and two chickens in every pot", that reverberated throughout the nation. Well, while we don't know so much about this two-chickens-in-every-pot business, there is more fact than fiction about there being a car in every garage, at least in seventeen states. The catch is that they are there because driving for the sake of driving is definitely "out." There will be no more inter-city or even intra-city visiting for a while, for three gallons of gas per week simply won't "take you there and bring you back."

BROOKE COUNTY FIRST OVER TOP

Brooke County Medical Society is the first to go over the top in 1943. On January 11th, the Secretary reported a one hundred per cent paid up membership in the West Virginia State Medical Association. Thus, the Northern Panhandle has set the pace for the other sections of the state.

The JOURNAL congratulates the officers and members of the Brooke Society for this expression of the kind of cooperation that cements more firmly the bond between the parent organization and component societies.

THE NEWS LETTER

The first issue of the *News Letter*, an Auxiliary project edited and published by Mrs. John P. Helmick, of Fairmont, president elect, made its initial appearance late in December. The issue consists of several pages of interesting news, notes, comments and editorials.

The editor deserves a great deal of credit for planning and distributing the *News Letter*, which admirably fills a long-felt want for such a publication among members of the Auxiliary.

MEDICAL PREPAYMENT PLANS*

In the swiftly changing world of today many roads are open but the one marked status quo is closed. If the medical profession does not choose where it will go, less competent powers will choose for it.

The American Medical Association thru its House of Delegates and some twenty state medical societies has already chosen the road of medical society prepayment plans. It is not an easy highway. It is an almost uncharted track through difficult and little known territory. But medicine has been hewing out that sort of hard passages for many centuries in its campaign against disease. There have always been quislings and quacks who claimed to know easier and more pleasant ways than those mapped by the physicians.

Politicians know that the achievements of medicine have made medical care one of the most highly prized assets of modern civilization, and they are now trying to grab that asset and use it as trading stock for votes and political power. The medical profession knows that medical care so used loses much of its value.

Medical society prepayment plans offer a way to put this asset at the service of the

*Guest Editorial by A. M. Simons, Assistant Director, Bureau of Medical Economics, American Medical Association, for January, 1942, issue of Virginia Medical Monthly. Reproduced with permission.

public, without thus destroying its value. The medical profession is little interested in methods of payment if these are sufficient to maintain medical education, research and the other elements which have made American service the most effective in the world in fighting disease. That profession is interested to see, in the words of the first of the Ten Principles adopted by the House of Delegates, that "all features of medical service in any method of medical practice should be under the control of the medical profession." With that principle assured medical societies have wholeheartedly cooperated with almost every type of social organization, and have greatly improved both medical service and administration under public health, workmen's compensation, care for the indigent, maternal and child health care, Farm Security Administration and almost innumerable local organizations. Even though financial arrangements were often unsatisfactory, the medical profession insisted that the service should be under medical control and be kept up to professional standards. The difficulty in doing this suggests one reason for starting prepayment plans by a medical society. Political and lay prepayment plans fix their income by what taxation will be borne or what subscribers will pay, and then cut the service to fit the available cash, usually also cutting the physicians' income below what will maintain standards while nearly always promising a "complete medical service", depending upon the incapacity of patients to judge the service to get away with deception.

Whenever the administration and standards of any phase of medical care have been entrusted to politicians or persons untrained in medical science and art, or wherever financial management has encroached upon the control of medical service that service has deteriorated and the sick have suffered. * * *

Medical society prepayment plans dare not deceive the public. They must meet equally the difficult problem of determining just what premiums can be collected and then just what service can be given for these premiums and finally just how this relation can be fully and honestly explained to the subscribers. Because this is but one of many hard problems of an honest effort to conduct a prepayment plan there have been many experiments, some of which failed, and numerous first mistakes to correct, so that some have grown fainthearted in the fight to organize and conduct such plans.

Yet in a short time about 600,000 persons have received the medical protection of these plans and the number of plans and subscribers grows daily. So greatly do prepayment plans giving an honest medical service change the desire and demand for medical care that figures based on plans with a fixed premium and more or less secretly restricted service furnish little useful actuarial information. Only experiments with medical society service prepayment plans can determine just what services can be honestly promised and then actually given when the medical care is maintained at the high professional standards demanded in medical society plans.

Today much experimenting has been done by plans now in operation and many of the facts required both for successful financial operation and satisfactory service to subscribers have been determined. It is now a question of development during the short time that the road is still open for choice between political or lay controlled plans, and those in which medical standards are established and maintained, as they always have been established and maintained by the medical profession. Medicine still has a chance to choose, but that chance is disappearing.

Events in nearly all the countries involved in this global war have forecast extensive social changes when the eagerly awaited peace arrives. Medical arrangements will not be isolated from those changes nor can organized medicine remain indifferent to them without risking the achievements of many centuries. Moreover, since medicine is the social trustee of public health it can reject this opportunity and duty only by betraying that trusteeship.

General News

COUNCIL INDORSES PROGRAM OF LEGISLATIVE COMMITTEE

The regular winter meeting of the Council of the West Virginia State Medical Association was held at the Daniel Boone Hotel, Charleston, Thursday, January 21, 1943, with the following members present:

Dr. R. J. Wilkinson, Huntington, President; Dr. T. M. Barber, Charleston, Treasurer; Dr. R. O. Rogers, Bluefield, Chairman; Dr. R. K. Buford, Charleston; Drs. J. C. Peck, Moundsville; J. B. Clinton, Fairmont; Guy H. Michael, Belington; C. O. Post, Clarksburg; Raymond Sloan, Huntington; George W. Easley, Williamson; Frank J. Holroyd, Princeton; H. L. Goodman, Ronceverte; Andrew E. Amick, Charleston; and Mr. Charles Lively, Executive Secretary.

The meeting was also attended by Dr. W. E. Vest, Huntington, Editor of the WEST VIRGINIA MEDICAL JOURNAL; Dr. W. T. Gocke, Clarksburg, First Vice President; Dr. Frank V. Langfitt, Clarksburg; Dr. Geo. F. Grisinger, Charleston, members of the State Legislative Committee; and Major L. R. Lambert, Medical Officer, State Selective Service.

The afternoon session, which was devoted to consideration of the proposed medical-hospital service plan bill, was also attended by Dr. Frank V. Langfitt, Clarksburg; Dr. Geo. F. Grisinger, Charleston, and Dr. George P. Evans, Iaeger, members of the State Legislative Committee; Dr. R. H. Dunn, South Charleston, and Dr. W. P. Black and Dr. A. Spates Brady, Charleston, members of the Kanawha Medical Society Legislative Committee; and Mr. Harlan Justice, Deputy State Insurance Commissioner.

Honorary Members Elected

The following doctors were elected as honorary life members of the State Association: Drs. I. C. Hicks, Huntington; Hugh Dunn, Richwood; H. H. Staats, Charleston; Guy Hinsdale, Lewisburg; E. F. Wehner, Clarksburg, and W. J. Leahy, Mannington.

Treasurer's Report

The report of Dr. T. M. Barber, Treasurer, in which he submitted the annual audit of the financial affairs of the Association, was presented and accepted. The report appears on page 64.

Procurement and Assignment

Dr. Robert K. Buford, State Chairman of the Procurement and Assignment Committee, reported that as of January 21, 1943, 388 West Virginia doctors had accepted commissions in the armed forces, this being 119 in excess of the quota fixed for the state for 1942. He stated that full credit for the extra number would be allowed on the state's quota for 1943, but that no quota has been fixed at this time.

The Council voted in the affirmative on a motion by Dr. Amick to go on record as requesting the State P. & A. Committee to do everything possible to retain in private practice in this state doctors now so engaged, excepting interns and residents, but including doctors whose applications for commissions are still pending.

Secretary's Report

The report submitted by the Executive Secretary, Mr. Charles Lively, showed that as of January 1, 1943, the Association had 1339 members.

The report also showed cash on hand in the amount of $4,126.22, with all current debts paid. Dues of members are being remitted promptly by secretaries and treasurers of component societies, together with the special assessment of $10 levied against each member by the House of Delegates at the 1942 meeting. The Secretary reported that the Brooke County Medical Society was the first to report a 100% paid-up membership for 1943.

Annual Meeting in Charleston

The members of the Council voted unanimously to hold the 1943 meeting of the West Virginia State Medical Association at Charleston. The annual conference of component society officers was deferred, on account of transportation difficulties.

Legislative Program Approved

Most of the afternoon session was devoted to the discussion of the proposed Medical-Hospital Service Plan bill, which was approved by a 5-4 vote of the members present and voting. However, on account of the close vote in Council, the members of the State Legislative Committee, at a meeting held later in the afternoon, voted unanimously to withdraw support of the measure.

The Council approved unanimously the program for cancer control, a four-year medical education plan for West Virginia students, the establishment of a public health course at West Virginia University and measures to tighten the laws relating to tuberculosis.

ANNUAL AUDIT OF FINANCES OF STATE MEDICAL ASSOCIATION

The following is a copy of the report of the audit of receipts and disbursements of the West Virginia State Medical Association, made by Norman S. Fitzhugh, Certified Public Accountant, and submitted by the Treasurer, Dr. T. M. Barber, and accepted by the Council at the regular meeting held at the Daniel Boone Hotel, Charleston, Thursday, January 21, 1943:

Dr. T. M. Barber, Treasurer,
West Virginia State Medical Association,
Charleston, West Virginia.

I have audited the receipts and disbursements of the West Virginia State Medical Association for the calendar year ended December 31, 1942, and am submitting herewith statements covering the various funds for the year under review.

All receipts of record and all disbursements were verified and the cash balances verified by statements of the depository bank. Sufficient tests were made to satisfy me that all receipts had been recorded and cancelled checks evidencing all disbursements were on hand.

I therefore certify that, in my opinion, all receipts in the year under review have been properly accounted for and all receipts and disbursements are correctly stated on the books and in the statements attached hereto. I further certify that the balances in bank at the close of business on December 31, 1942, aggregated $329.28.

A statement of cash follows:

Balance December 31, 1941	$ 4,846.13
Receipts for the period	21,323.87
	26,170.00
Disbursements for the period	25,840.72
Balance December 31, 1942	$ 329.28

The cash balance at December 31, 1942, is attributable to the various fund accounts as follows:

Medical Journal Fund		$12,273.64
Deficits—General Fund	$ 3,896.07	
Indigent Fund	971.13	
Medical Defense Fund	636.58	
Convention Fund	1,303.08	
Nicholson Property Fund	5,137.50	$11,944.36
Total All Funds—Net		$ 329.28

The life insurance policy on the life of Dr. Nicholson was inspected. This policy had a cash value of $11,000.00 on December 31, 1942. A premium of $1,258.00 was paid on this policy in 1942.

The Fidelity Investment Association annuity contract was not on hand for inspection having previously been turned over to the Receivers. Correspondence in reference to this contract was examined but the ultimate recovery cannot be stated at this time.

The Postal Savings Bonds owned by the association were sold in December, 1942 and a check for the proceeds, amounting to $2,146.50, was received and deposited in January, 1943 and will be shown in 1943 receipts.

A comparative statement of assets at December 31, 1941, and December 31, 1942, is as follows:

	Dec. 31, 1941	Dec. 31, 1942	Increase Decrease
Cash in Bank	$ 4,846.13	$ 329.28	‡$4,516.85
South Ruffner Park Property	8,442.57	8,442.57	—
U.S. Postal Savings Bonds	2,067.00	2,146.50	79.50
Cash Surrender Value Life Insurance	10,337.50	11,000.00	662.50
Annuity Contract — Cost	3,544.20	3,544.20	—
	$29,237.40	$25,462.55	‡$3,774.85

NORMAN S. FITZHUGH,
Certified Public Accountant.

Charleston, W. Va.
January 8, 1943.

‡ Decrease.

COMBINED STATEMENT OF RECEIPTS AND DISBURSEMENTS CALENDAR YEAR 1942

BALANCE JANUARY 1, 1942		$ 4,846.13
RECEIPTS:		
Dues (Net)	$11,314.50	
Advertising (Net)	7,414.60	
Emblems Sold	129.58	
Commercial Exhibits	1,637.04	
Rent—Nicholson Property	780.00	
Interest on Savings Accounts	18.65	
Miscellaneous	29.50	
Total Receipts		21,323.87
		$26,170.00
DISBURSEMENTS:		
General Fund	$14,768.87	
Medical Journal Fund (Eliminating Transfers)	5,152.22	
Indigent Fund	1,558.00	
Medical Defense Fund	752.50	
Convention Fund	3,357.59	
Nicholson Property Rent Account	251.54	
Total Disbursements		25,840.72
BALANCE DECEMBER 31, 1942		$ 329.28
Charleston National Bank—Checking Account		$ 205.05
Charleston National Bank—Savings Account		124.23
Total (As per Balance Above)		$ 329.28

RECEIPTS AND DISBURSEMENTS GENERAL FUND CALENDAR YEAR 1942

BALANCE JANUARY 1, 1942			$ *460.35
RECEIPTS:			
Dues	$11,336.50		
Less: Refunds	22.00	$11,314.50	
Interest on Savings Accounts		18.65	
Total Receipts			11,333.15
			$10,872.80

DISBURSEMENTS:		
Salary—Executive Secretary	$ 5,920.00	
Office Salaries	2,417.15	
Office Supplies and Expense	592.49	
Office and Library Rent	900.00	
Library Expense	24.25	
Telephone and Telegraph	427.58	
Postage	351.75	
Traveling Expense	616.65	
Miscellaneous	855.48	
Social Security	118.70	
Secretary's Conference	781.85	
Procurement and Assignment Survey	617.34	
Past Presidents Book	1,145.63	
Total Disbursements		14,768.87
BALANCE DECEMBER 31, 1942		$*3,896.07

* Deficit.

Receipts and Disbursements
Medical Journal Fund
Calendar Year 1942

BALANCE JANUARY 1, 1942			$11,852.18
RECEIPTS:			
Advertising	$ 8,580.55		
Less: Discounts	1,165.95	$ 7,414.60	
Emblems Sold		129.58	
Miscellaneous		29.50	
Total Receipts			7,573.68
			$19,425.86
DISBURSEMENTS:			
Printing	$ 4,623.23		
Engraving	192.58		
	4,815.81		
Less: Discounts	102.45	$ 4,713.36	
Postage		123.30	
Emblems Purchased		42.50	
Miscellaneous		273.06	
Transfer to Indigent Fund		2,000.00	
Total Disbursements			7,152.22
BALANCE DECEMBER 31, 1942			$12,273.64

Receipts and Disbursements
Indigent Fund
Calendar Year 1942

BALANCE JANUARY 1, 1942		$*1,413.13
RECEIPTS:		
Transfer from Medical Journal Fund		2,000.00
		$ 586.87
DISBURSEMENTS:		
Premiums on Life Insurance — Dr. Nicholson	$ 1,258.00	
Benefits Paid to Mrs. S. A. Daniel	300.00	$ 1,558.00
BALANCE DECEMBER 31, 1942		$ *971.13

* Deficit.

Receipts and Disbursements
Medical Defense Fund
Calendar Year 1942

BALANCE JANUARY 1, 1942	$ 115.92
RECEIPTS	None
DISBURSEMENTS—Legal Fees	$ 752.50
BALANCE DECEMBER 31, 1942	$ *636.58

* Deficit.

Receipts and Disbursements
Convention Fund
Calendar Year 1942

BALANCE JANUARY 1, 1942		$ 417.47
RECEIPTS:		
Commercial Exhibits	$ 1,637.04	
Less: Refunds	140.00	
Total Receipts		$ 1,497.04
		$ 1,914.51
DISBURSEMENTS:		
Supplies and Labor	$ 672.38	
Traveling Expense	764.94	
Entertainment	1,235.63	
Reporting	383.34	
Miscellaneous	161.30	
Total Disbursements		$ 3,217.59
BALANCE DECEMBER 31, 1942		$*1,303.08

* Deficit.

Receipts and Disbursements
Nicholson Property Account
Calendar Year 1942

BALANCE JANUARY 1, 1942		$*5,665.96
RECEIPTS:		
Rents		$ 780.00
		$*4,885.96
DISBURSEMENTS:		
Taxes	$ 94.20	
Repairs	157.34	$ 251.54
BALANCE DECEMBER 31, 1942		$*5,137.50

* Deficit.

ANNUAL CONFERENCE DEFERRED

The annual Conference of Presidents and Secretaries, usually held during the month of January, was deferred for the year 1943 by the unanimous vote of the members of the Council at a meeting held in Charleston, January 21st. It was felt that the difficulties of transportation would mitigate against the success of such a meeting at this time.

All matters usually discussed at this conference will no doubt be considered at the annual state meeting, which will be held late in the Spring at Charleston.

RULING PERMITS USE OF CARS TO ATTEND MEDICAL MEETINGS

An abstract of the ruling of the West Virginia office of the OPA that permits doctors to use their cars for the purpose of driving to attend county and area medical society meetings was made the subject of a special bulletin mailed a few days ago to the members of the West Virginia State Medical Association.

The ruling is of so much importance to the members of the profession that the letter from the state attorney for the OPA is reproduced in full:

OFFICE OF PRICE ADMINISTRATION
West Virginia State Office
Peoples Building
Charleston, W. Va.

January 14, 1943.

OFFICIAL RATIONING INTERPRETATION

Legal Division
West Virginia State Medical Association
Atlas Building . .
Charleston, West Virginia

Attention: Mr. Charles Lively, Executive Secretary.

Dear Mr. Lively:

Reference is made to your request for an interpretation with respect to the Emergency Gasoline Restrictions on the use of Basic A books in the State of West Virginia.

Under these restrictions, a person can use the "A" Book for any "occupational" driving (without any limitation), and for essential "family" and "personal necessity" driving with the limitation that adequate alternative means of transportation do not exist. *All other kinds of driving by civilians*, including but not limited to pure "pleasure" driving, are considered unessential and, therefore, are prohibited.

You state that the constituent county and area medical associations of your State Medical Association hold regular monthly meetings of a purely scientific and professional nature, at which meetings there are no social functions and where the members congregate for the purpose of giving and hearing scientific papers, demonstrations or exhibitions; that these meetings are never held more than once a month; that they are in the nature of refresher courses to which specialists in particular fields are invited in to lecture, and that banquets are not held in connection with such meetings.

A copy of the text of the Emergency Gasoline Restrictions is herewith attached for your full information.

This is to advise that "personal necessity" driving, within the meaning of the Emergency Gasoline Restrictions, includes driving to attend meetings directly related to the occupation or profession of the owner or person using the car under a Basic A ration. Therefore, driving to attend such regular monthly meetings of county and area medical associations, which have no social aspects, constitutes eligible "personal necessity" driving for which a Basic A book may be used, *provided however, that adequate alternative means of transportation do not exist in the particular individual's case.* In other words, even though "personal necessity" driving is permitted under these restrictions and even though driving to such meetings constitutes "personal necessity" driving, this is not a blanket authority to each and every physician and surgeon, without limitation, to drive to attend such meetings. It depends upon the individual doctor's situation—the place where he works in relation to and the distance from the place of the medical meeting. In short, it depends in each individual case on the existence or absence of adequate alternative means of transportation.

In this connection, it has been ruled that an applicant may show that there are no adequate alternative means of transportation available to him by establishing (a) the unavailability of public or other private means of transportation; or (b) that such other means of transportation, if available, are inadequate because of the locations, schedules or over-crowded condition; or the physical disability of the person needing transportation; or the nature of the work for which transportation is necessary.

As to physicians and surgeons who customarily go on emergency calls, we are of the opinion that the nature of the work is such that there is no adequate, alternative means of transportation to the use of the physician's own passenger car. To give you the other extreme however, in the case of a physician who lives in the City of Charleston and who does not make visits outside of his office, there is adequate bus or taxi transportation at least within the meaning of our regulations, and it would not be proper to use a passenger car to attend medical meetings. In rural areas, however, or in any area where the medical meeting is being held outside of the city where the doctor practices, it is our opinion that adequate alternative means of transportation do not exist because of the shortage of doctors in the State and the public interest in enabling doctors to get back to their offices and their work as soon after such meetings as possible. For most doctors, therefore, driving to such meetings in their own passenger cars would be absolutely permissible with-

out any question, because adequate alternative means of transportation do not exist.

Physicians, of course, are eligible for B and C mileage which is issued exclusively for "occupational" driving. To repeat, as to "occupational" driving, there is no limitation or proviso requiring absence of adequate alternative means of transportation, but there is such limitation as to "personal necessity" driving and attendance at medical meetings constitutes "personal necessity" driving rather than "occupational" driving.

If the medical associations hold other special types of meetings which are predominately social in character, it is understood, of course, that driving to attend such meetings would not be permissible under the Emergency Gasoline Restrictions and Basic A ration books could not be used to attend such functions.

We appreciate your cooperation in consulting this office and know that you will understand that acute war needs have made these restrictions necessary and that everyone must accept them in good spirit until such time as the restrictions may be lifted.

Respectfully,
(Signed) Bernard Sclove
State Attorney

BUDGET BILL INTRODUCED

The Budget Bill introduced in the Legislature Friday, January 22nd, carries an item of $75,000 for each year of the biennium for the treatment, control and cure of cancer. Enabling legislation setting up a Division of Cancer Control in the State Health Department, and providing for a tissue diagnostic service and the clinical treatment of cancer, will be introduced within the next few days.

Another item of interest and importance to the members of the medical profession relates to the establishment of a four-year course in medicine in connection with the School of Medicine at West Virginia University. The amount of the appropriation for the first year is $20,000 and for the second, $40,000.

An item of $15,700 for each year of the biennium for the establishment of a Public Health Course at West Virginia University School of Medicine is included in the appropriation asked for the University.

All three of these matters covered in the Budget Bill have the unanimous approval of the members of both the Legislative Committee and the Council of the West Virginia State Medical Association.

LEGISLATIVE COMMITTEES NAMED

The West Virginia Legislature, which convened in regular session Wednesday, January 13th, organized by electing Senator James Paull, of Wellsburg, President of the Senate, and John E. Amos, of Charleston, Speaker of the House of Delegates.

Both officers are veteran members of the Legislature, Paull having served continuously as a member of the Senate since 1933, and Amos having served as a member of the House from Kanawha County in 1935, 1939 and 1941.

Committee Chairmen

All committees have been named by the presiding officers. W. Broughton Johnston, attorney, of Princeton, heads the important Committee on the Judiciary in the Senate and H. L. Van Sickler, of Lewisburg, is chairman of a similar committee in the House. Fred Allen, of Marlinton, and Dan B. Fleming, of St. Marys, are chairmen, respectively, of the Senate Committees on Finance and Education. In the House, J. C. Hansbarger, of Welch, heads the Finance Committee, and Rush D. Holt, of Weston, is chairman of the Committee on Education.

Medicine and Sanitation

The Senate and House Committees on Medicine and Sanitation, to which most of the bills in which the medical profession is interested will be referred, are as follows:

Senate: Arnold M. Vickers, Montgomery, Chairman; Don J. Eddy, Morgantown; Dan B. Fleming, St. Marys; O. D. Hall, Beckley; W. Broughton Johnston, Princeton; Andrew R. Winters, Huntington; Theodore M. Bowers, New Martinsville; E. Ray Reed, Clay; and G. O. Young, Buckhannon.

House: Dr. George P. Evans, Iaeger, Chairman; Henry F. White, Huntington; Max F. Carey, Kenova; N. T. Downs, Mill Creek; Francis Freshwater, Follansbee; O. F. Garten, Talcott; Wendell H. Holt, Richwood; John G. Hudson, Huntington; William McCoy, Franklin; Wallace Morgan, Hanover; P. T. Saunders, Bluefield; J. Alfred Taylor, Fayetteville; George C. Trumbo, Milam; Mrs. Nell W. Walker, Winona; John C. Ward, Beckley; Charles R. Beard, Martinsburg; Dr. J. W. Hartigan, Morgantown; E. G. Pierson, Clay; H. L. Potts, Grafton; and, John I. Rogers, Keyser.

COMMITTEE WITHDRAWS SUPPORT

At a meeting of the Legislative Committee of the West Virginia State Medical Association held at Charleston, January 21st, the members voted unanimously to withdraw support of the medical-hospital service plan bill, drafted for introduction in the Legislature by the State Insurance Commissioner. This action by the committee followed the approval of the bill by a 5-4 vote of the members of the Council at a meeting held the same day.

While the Legislative Committee had previously voted approval of the bill, the members felt that the sharp division among the members of the Council, coupled with objections to several provisions by members of the Association over the state, did not justify their continued support of the measure in its present form.

1943 MEETING AT CHARLESTON

The 76th annual meeting of the West Virginia State Medical Association, streamlined to two days, will be held late in the Spring or early in the Summer of 1943, at Charleston. The action of the Council in voting to hold the meeting was unanimous.

No decision was reached concerning the date for the meeting, but the President and the members of the Program Committee will decide upon a date and will also have full charge of arrangements. The committee is composed of Dr. O. B. Biern, Chairman, of Huntington; Dr. W. W. Point, of Charleston; and, Dr. C. O. Post, of Clarksburg.

SUPPLY OF EMBLEMS EXHAUSTED

The supply of official Association Automobile Emblems is entirely exhausted, and the headquarters office of the West Virginia State Medical Association has been informed that the manufacture of such emblems has been discontinued for the duration.

Every effort has been made to obtain a few extra emblems, but the decision to discontinue the manufacture during the war is final. It is possible that some substitute in the form of a sticker for windshields might be available a little later on in the year.

Germs were first seen by man in 1676 when Anthony Leeuwenhoek made a one-lens microscope.—*Science News Letter.*

Obituaries

GEORGE HICKS DAVIS, M.D.

Dr. George Hicks Davis, of Hollidays Cove, West Virginia, was born in Beaver County, Pennsylvania, March 26, 1876. He graduated from the University of Maryland School of Medicine in 1905, and later did postgraduate work at the New York Postgraduate Medical School and Hospital, and the Cook County Hospital, at Chicago.

Upon graduation, Dr. Davis located for the practice of his profession at Chester, West Virginia, where he remained until 1910, when he moved to Weirton. He was one of the pioneer doctors in that industrial community, and continued in active practice there until his retirement in 1940. He was a Mason and a member of the Presbyterian Church, and was always active in civic affairs.

Dr. Davis died suddenly at his home, Nov. 20, 1942, as the result of a cerebral hemorrhage. He is survived by his widow, the former Catharine Candler, of Baltimore, Maryland, and by two daughters, Lydia Ann Davis, and Mrs. H. Burdette Crow, both of Hollidays Cove.

GEORGE WASHINGTON CRILE

George Washington Crile, world renowned surgeon, died, January 7, at the Cleveland Clinic, aged 78, of subacute bacterial endocarditis.

Dr. Crile was born in Chile, Ohio, Nov. 11, 1864. He graduated at Ohio Northern University and in 1887 at the University of Wooster Medical Department, Cleveland, now Western Reserve University School of Medicine. Early in his career Dr. Crile studied in Vienna, London and Paris. He served at Wooster University first as lecturer and demonstrator in histology and later as professor of physiology and professor of the principles and practice of surgery. He was professor of clinical surgery at Western Reserve University from 1900 to 1911 and professor of surgery from 1911 to 1924. He was also director of research at the Cleveland Clinic Foundation, of which in 1921 he was a co-founder.

Research conducted by Dr. Crile included the basic factors concerned in circulation, respiration, blood chemistry and the body's source of energy. He was perhaps first to make a direct blood transfusion, performed in 1905.

Dr. Crile was awarded the Alvarenga prize by

the College of Physicians of Philadelphia in 1901, the Cartwright prize by Columbia University in 1897 and 1903, the Senn prize by the American Medical Association in 1898, the American Medicine medal for service to humanity in 1914, the National Institute Society Sciences medal in 1917 and the Trimble Lecture medal in 1921. In 1925 the Lannellongue International Medal of Surgery was presented to him by the Société internationale de chirurgie de Paris, in 1931 the Cleveland medal for public service and in 1940 the distinguished service gold key of the American Congress of Physical Therapy. He was a member of the founders' group of the American Board of Surgery. In 1923 he served as president of the American Surgical Association.

A member of the board of regents of the American College of Surgeons since 1913, Dr. Crile was chairman of the board from 1917 to 1939 and president of the college in 1916. In 1907 he was Third Vice President of the American Medical Association and chairman of its Section on Surgery, 1910-1911. * * *

In 1898 Dr. Crile was brigade surgeon in the volunteers with the rank of major, serving in Cuba and Puerto Rico. He was a major in the Officers' Reserve Corps, and professional director of the U. S. Army Base Hospital number 4, Lakeside Unit (British Expeditionary Force number 9) in service in France for one year beginning May 1917, subsequently serving as senior consultant in surgical research, lieutenant colonel and in November 1918 colonel. He was brigadier general in the Medical Officers' Reserve Corps in 1921, holding the same rank in the auxiliary reserve corps since 1929. In 1919 he was awarded the Distinguished Service Medal and in the same year became an honorary member of the Military Division, third class, Companion of Bath (British). In 1922 he was made a Chevalier in the French Legion of Honor.

Dr. Crile was a prolific contributor to scientific literature. * * * Dr. Crile's contributions to experimental work through the years resulted in many improvements in surgery and medical practice. He traveled widely; his charm and forceful personality marked him for leadership early in his career. The contributions of his active and curious mind are a lasting monument.—*Journal of the A. M. A.*, Jan. 16, 1943.

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Doctors in the War

NEARLY 400 DOCTORS COMMISSIONED

The total number of West Virginia doctors in the military service approached the four hundred mark late in January. The records in the headquarters office of the West Virginia State Medical Association show that 388 doctors have already been commissioned. The following additional list of doctors who have accepted commissions has been compiled for the period from December 22, 1942, to January 22, 1943:

BARBOUR-RANDOLPH-TUCKER		
Stanley J. Klyza	Elkins	Navy
EASTERN PANHANDLE		
Z. J. Waters	Martinsburg	
KANAWHA		
R. N. O'Dell	Belle	Army
Frederick C. Reel	Charleston	Army
RALEIGH		
S. L. Derkach	Glen Rogers	Navy
TAYLOR		
H. L. Noble	Grafton	Army

County Society News

CABELL COUNTY

At the regular meeting of the Cabell County Medical Society, held Thursday evening, January 14th, at the Prichard Hotel, Huntington, the principal address was delivered by Dr. F. W. O'Brien, Boston Radiologist, Past President of the American Radium Society and a recognized authority on Irradiation Therapy. His subject was "Carcinoma of the Uterus and Its Management."

COLE D. GENGE, M. D., *Secretary.*

BOONE COUNTY

The regular monthly meeting of the Boone County Medical Society was held at Racine, Sunday, December 13th, at 2:00 P. M. Dr. George P. Heffner, of Charleston, was the guest speaker, his subject being "The Sulpha Drugs." Following the address, there was a round-table discussion of the subject.

A. C. LEWIS, M. D., *Secretary.*

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16 pages	13.55	12.55	16.55	15.05	20.55	18.05	29.50	25.50
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THE WEST VIRGINIA MEDICAL JOURNAL

ATLAS BUILDING, CHARLESTON, W. VA.

The Committee on Publication is not responsible for the authenticity of opinion or statements made by authors or in communications submitted to this Journal for publication. The author or communicant shall be held entirely responsible.

WALTER E. VEST, M. D.
Editor
955 Fourth Ave.
Huntington, W. Va.

MR. CHARLES LIVELY
Business Manager
Atlas Building
Charleston, W. Va.

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ENTERED AS SECOND-CLASS MATTER, JANUARY 1, 1926, AT THE POST OFFICE AT CHARLESTON, WEST VIRGINIA

Vol. XXXIX March, 1943 No. 3

PROPTOSIS AS A DIAGNOSTIC PROBLEM*

By RALPH I. LLOYD, M. D., F. A. C. S.
Brooklyn, New York

THERE are few conditions causing proptosis that operate at all ages so we may simplify our problem somewhat by discussing the various types as they occur in age groups.

The newborn infant may show an eye protruding between the lids at birth. This luxation may be caused by the tip of the forceps blade pressing the upper lid into the orbit until the eye pops out and is in danger of avulsion as the head passes down over the perineum. Another cause of this accident is the prominent sacral promontory of a distorted pelvis which scoops out first one eye and then the other as the head rotates and descends. Luxated eyes do well if replaced at once before the cornea is irreparably damaged by exposure.

Another proptosis evident at birth is caused by nasofrontal meningocele. This may be unilateral or bilateral. The meningeal sac herniates through an abnormally large foramen caecum at the front of the crista galli. The sac passes down and escapes into the orbit laterally through an opening made at the expense of the lachrymal bone and the nasal process of the superior maxillary. From the orbit it passes out upon the face at the lower inner angle of the orbit, making the "frog face." The appearance is characteristic and x-rays taken from appropriate angles will show the bony defects as detailed here. These are uncommon but the problem of reconstruction is serious because of the extensive changes in the bones of the head and orbit.

Meningocele of the optic nerve sheath behind the globe may push the eye forward but there is nothing characteristic in the eye

THE AUTHOR

Dr. Ralph I. Lloyd, graduate New York Medical College; Consulting in Ophthalmology, Brooklyn Eye & Ear Hospital, Long Island College Hospital; Lecturer Ophthalmology, N. Y. University Medical School, Postgraduate Department; President, American Academy Ophthalmology and Otolaryngology, 1942; American Ophthalmological Society; Brooklyn Ophthalmological Society.

*Delivered at the seventy-fifth annual meeting of the West Virginia State Medical Association, at Huntington, West Virginia, July 13, 1942.

or the x-ray. This is a hernia of the optic nerve sheath and may exist with no other changes in the eye or the tissues about it. The protrusion is elastic to pressure upon the closed lid but the cure is difficult because the delicate sac wall collapses easily, making it almost impossible to remove the secreting serous surface. One form of this sacculation is associated with a depression (coloboma) in the nerve head, in the bottom of which is a pit indicating the original connection of the hernial sac with the retrobulbar portion of the optic fissure. The clue to this type may be found with the ophthalmoscope.

Luxation of right eye and avulsion of left during delivery. Mother feeble-minded, club feet and distorted pelvis with prominent sacral promontory.

In hospitals with large obstetric services, an occasional case of protruding eye is seen soon after birth. The bulging is neither extensive nor progressive, and in a few days it is well without treatment of any kind. None of these come to autopsy so we assume that they are collections of fluid beneath the periosteum of the orbital roof along the sutures, like caput succedaneum.

Very rarely, a steady progressive bilateral proptosis comes on soon after birth. The child runs a temperature and is very evidently weak and ill. Autopsy on such cases have shown a chestnut-sized clot of blood beneath the periosteum of the orbital roof pushing the eyes forward. There were small hemorrhages on the cerebral convexity with adhesions. This was hemorrhagic disease of the newborn which is curable today by blood transfusion.

Bilateral colobomas of the optic nerve head with hole in the disc and cyst of the nerve sheath on same side. Dr. Phinizy Calhoun. Archives of Ophthal., III—p. 71, 1930.

Another congenital defect is not a bulging eye but a complete eversion of redundant mucous membrane of the upper fornix and the upper lid, which has apparently no levator muscle to hold the lid in place. When the bilateral mass of redundant mucous membrane was removed by Dr. Hargitt of the Kings County Hospital staff, both lids hung down flaccid over the eyes. The child lacked vitality and died of inanition during the first month. A fold of mucous membrane may hang down from the fornix under an apparently normal eyelid, and attach itself to the lower free margin of the lid. This is known as epitarsus but causes no impairment of function unless, as in this case, there are additional developmental defects.

A defect occasionally seen at birth is a tangled mass of veins beneath the conjunctiva at the side of the globe. These usually enlarge as the child grows older, with protru-

sion of the eye, depending upon the amount of vascular tissue deep in the orbit behind the eyeball. The treatment of the more severe cases of this type is not easy because there are associated alterations of orbital tissues and operating upon enlarged veins is difficult. The electrotherapist can help by controlling the hemorrhage or by destroying the larger veins.

NEUROFIBROMATOSIS

A progressive congenital defect is neurofibromatosis. The illustration shown is by courtesy of Dr. Arthur Knapp. At birth, the upper lid was very thick and the eye prominent. Later, an enucleation was done because the cornea was exposed continuously and the eye ruined. Along with the neurofibromatosis goes an elephantiasis which reaches extremes. The feel of the subcutaneous tissues is characteristic; the tissues almost creak beneath your fingers and the skin is cold and smooth.

Another type of abnormal position of the eye at birth is the Horner syndrome of small optic fissure, receded eye and small pupil. This is usually due to injury of the brachial plexus during birth. Sympathetic fibers to the eye emerge from the spinal cord with the fibers of the brachial plexus, at the fifth cervical level. Traction upon the arm during birth injures all of these fibers as they emerge from the spinal canal and the sympathetic supply to the eyeball and lids is paralyzed causing the symptoms described. The opposite condition of prominent eyeball, wider optic fissure and dilated pupil is due to irritaiton of the cervical sympathetic. A case of this is shown in a young girl with no other assignable cause than enlarged thyroid.

The next age group includes the nursing child which may show a prominent eye on one or both sides with no other symptoms except mild fever and irritability. We should assume that such an eye is caused by scurvy until proven otherwise. While investigating other possible causes, give this child orange juice. The mother will most certainly say the child has had orange juice, if asked; but this should not delay its use. These cases were rather common some years ago but should never occur in this day. If scurvy is the cause, only a few days use of the antiscorbutic is necessary to effect a cure. If the patient is not hospitalized the physician must be certain that his directions are followed because a parent so stupid as to allow such a condition to develop, will be determined to justify her position by whatever means.

The next age group includes children from two years on. The most important but fortunately the rarest condition causing proptosis is chloroma. The lachrymal gland is replaced by masses of green lymphoid tissue which push the eye out of place and spread rapidly into the temporal fossa through the sphenomaxillary fissure. The diagnosis is made from the blood picture of myelogenous leukemia. The disease is fatal in the course of a few months. Lymphoid tissue everywhere in the body is involved. Among the places where bone is rapidly eroded by this malignant tissue are the roof and base of the skull, along the blood channels of the dura. The same tissue is found on the posterior surface of the sternum and ribs, along the vessels. The hilus of the liver and kidneys and the celiac axis also show the same masses. The mouth ulcerates with foul odor and appearance of diphtheria; the ears may run and the second eye soon protrudes and in the course of two or three months, an apparently healthy child becomes a melancholy object.

EARLY DIAGNOSIS IMPORTANT

Occasionally the diagnosis is complicated by history of a blow upon the eye followed by much ecchymosis and protrusion that increase steadily. The parents usually demand that something shall be done at once and these cases may pass from hand to hand because the disease is not controlled. The average parent is sure that if enough money is spent and the proper medical service obtained, sudden death from these strange and relentless diseases can be prevented. It behooves the practitioner to establish the diagnosis early, to make his burden as light as possible.

Xanthomatosis may effect children as well as adults. The four symptoms of this disease are bulging eyes, xanthomatous tumors in or beneath the skin, diabetes insipidus and erosions of bone. The bulging eye is caused by masses of cells stuffed with undigested fat (foam cells), accumulating in the lachrymal gland. The diabetes insipidus is believed to be caused by xanthomatous tissue accumulating in the pituitary fossa, disturbing the function of the pituitary gland. The lachrymal gland and upper lids are often involved early in the disease, displacing the eye, and small masses of the xanthomatous tissue located in depressions of the skull, both inside and out, erode the contiguous bone, making holes. The skull is not the only bony tissue attacked. The disease is also known as Schuller-Christian disease from the names of the radiologist and the able clinician who clarified the diagnosis. The children die of

Adult case of xanthomatosis with involvement of orbit and eyelids.

sclerosis of lung tissues because the blood carries elements irritating to the lung parenchyma. Many recover or remain in a status quo but are victims of diseases otherwise trivial. Tumefaction of the lids and the protrusion of the eyes in adults may reach an amazing state.

Another strange disease attacking older children is xeroderma pigmentosum. This disease affects the uncovered skin exposed to the sun to which it is peculiarly vulnerable. The eyes are proptosed and the lid linings infected. The skin shows nodules and these patients are liable to cancerous or sarcomatous degeneration of any of the nodules in the skin or in the mucous surfaces, or in the orbit. Despite these complications, they live on under seemingly impossible conditions.

INFECTIONS OF ORBITAL CELLULAR TISSUES

Theoretically, sinus disease cannot attack a child before it is three years of age, because the bony sinuses have a definite course of development. Nevertheless, after colds, influenza, scarlet fever, pneumonia or bathing in polluted waters of beaches miles from large cities; children and adults may complain of sudden pain in the orbit and bulging eyes. These are infections of the orbital cellular tissues from the nose, and usually an abscess in the orbit forms and destruction of the eye may follow from ulceration of the cornea from exposure because the lids do not close over the globe. If infection of the ethmoidal cells is evident, the cases are simpler but always difficult. In younger children, only a few cells may have been infected and from these, the infection passed into the orbit with a much milder course. The ethmoidal cells in these cases may not show retained pus and saving the eye requires early opening of the abscess in the orbit. If nature is left unaided, pus may follow forward along the superior rectus muscle and pour down over the cornea and ruin the eye. It is much wiser to open through the upper lid at the inner corner of the orbit or at the inner side of the eye. If the ethmoidal cells are seriously involved, this treatment alone may save the eye but permanent cure is possible only if the rhinologist maintains adequate drainage.

Defective drainage of the frontal sinus and ethmoids may cause retention of mucus which gradually displaces the lower bony wall of the frontal sinus, displacing the eye outward and forward. This is a slow painless process. The retained mucus is colorless, odorless and stringy. It is a simple matter to eliminate the mucocele but it will recur

unless drainage is permanently established. The x-ray picture is characteristic, showing the dilated ethmoidal cells and frontal sinuses with the frontal septum pushed over to the normal side.

There is a group of osseous dystrophies in which the skull is deformed and the eyes prominent. The disease may be evident early in childhood but the milder cases escape the parent's eyes until an eye examination is made for defective vision. The most common is tower skull. Ordinarily, the skull is involved alone and is elongated as the name suggests. In addition, x-ray films show the positive signs of increased intracranial pressure and the roof of the orbit slanted sharply down causing the eye to protrude, in some cases to a very great degree. The intellect is not affected but there is more or less atrophy of the optic nerve with loss of vision ranging from zero to blindness. Occasionally, other bones of the body are involved, especially those of the lower extremities. In this type, the bones are weak, the legs bowed, often with several green stick fractures of the tibias and fibulas, and the great trochanters in contact with the ilium above the hip may form a false joint. Dysostosis multiplex is the name used for the extreme form, while the simple type receives the title of cranial dystrophy.

HYPERTELORISM

Another type of cranial dystrophy appears in the literature under the name of hypertelorism which means the eyes are too far apart. The skull is flattened from above downward, and the orbits are far apart because the lesser wings of the sphenoid are much larger than normal. The puncta of the lower lids are one-third the way from the inner canthus in contrast with the normal short distance. In the pronounced cases, the first dentition is delayed and may not be complete until the early teens. Permanent teeth may be fewer than normal and develop very imperfectly. In addition, the central part of the shaft of the clavicles may be missing, allowing the shoulders to move around in a most amazing manner. The pubic bones may be defective also, and then the legs can be moved about so freely that some of the positions they assume are indeed grotesque. This type of dystrophy has been studied by Crouzon and is referred to as "Maladie de Crouzon."

LEONTIASIS OSSEA

Leontiasis ossea may begin in childhood but is not noticed until adult life. This is so rare that it is hardly worth while discussing. The facial deformity of this disease is tremendous. It begins in the superior maxillary bones and spreads to the bones of the skull base. The bones are eburnated and very thick, in contrast with Paget's disease in which the bones are very thick but weak and spongy. The nasal passages may be completely blocked. A skull in the anatomical museum of Prague gives an idea of the changes much better than words. While leontiasis begins in childhood, osteitis deformans (or Paget's disease) is a disease of adult life and commoner. The bones of the head above the ears may be the first to thicken and attract attention. Sooner or later the long bones are involved also. The bones become porous and weak so an adult may become bow-legged late in life. The spine bows under the weight of the head and the patient may lose an inch or so in height. The first trouble may be difficulty in getting his hat to fit. Profound changes take place in the patient's body especially in elastic tissues, as is shown by the appearance of angioid stripes in the retinas and pseudoxanthoma elasticum in the skin of the neck and axillas. The nares are smaller so the breathing is audible and the foramina of the skull narrowed which is believed to cause the asthenia from which these patients suffer. Some of them are so weak they cannot stay out of bed but for a few minutes at a time. This period of irritable weakness is usually temporary, an adjustment taking place after a time. Abdominal malignancy is not unusual in these cases but there is apparently no connection between the two. Parathyroid

extract seems to help the state of irritable weakness.

Hyperostosis of the skull is preceded usually by a skull injury or a prolonged suppuration of the tear sac. The disease is limited, the bone is very hard but the distortion may be extreme. While the affected area is limited in extent, the sutures are rarely a part of the boundary between normal and diseased tissues. Some of the cases reported have complained bitterly of pain in the head, and in fits of depression have shown a suicidal tendency.

Facial hemihyperthrophy includes a half of the face and frontal skull and the soft tissues over the affected bones may be very thick. Hemiatrophy is the opposite of the previous disease and like it, occurs without known cause. Traumatic enophthalmus involves the soft tissues of the orbit and face

Meningicma involving the anterior cerebral lobe and the orbit. No complaints other than proptosis. Operation by Dr. Jeff Browder.

about the eyes. The symptoms are somewhat like those of the Horner syndrome, a disease of the sympathetic nervous system; but in addition, there is a definite atrophy of the soft tissues. In one case the atrophy of the tissues may be more prominent while in another, the narrowing of the lid fissure, the recession of the eyeball and the small pupil may be the striking features. It is possible that fracture of the bones of the orbit and face may have caused severe damage to the ciliary ganglion and the sympathetic nerve supply of the orbit and globe.

Although not originally a bony tumor, meningioma beginning in the meninges near the lesser wings of the sphenoid, soon involves the bones of that part of the skull and may invade the orbit, pushing the eye far out of place. The growth is slow and without pain. The x-ray will show the involvement of the sphenoidal wings and invasion of the anterior lobe of the brain may follow. These tumors were originally diagnosed as osteomas and considered inoperable. The radiologist and the pathologist have cleared up the diagnosis and successful operations are now done. The illustration shows a patient with a tumor of this type invading the anterior right lobe of the cerebrum with no other symptoms than proptosis. It is not conceivable that the left frontal lobe could be affected in this way. At the operation, the tumor was found to have broken through into the orbit explaining the displaced eye, and the anterior half of the frontal lobe was removed by Dr. Jefferson Browder but the patient did not survive. It is hard to understand how a person could be affected in this way with so few symptoms and live. The average case of meningioma attracts attention because of the proptosis. As the growth is very slow and there is no pain, operation is usually undertaken only when the growth becomes large.

HARD BONE IN ETHMOIDAL CELLS

A mass of hard bone may form in the ethmoidal cells, growing upward into the cranial cavity, perforating the dura, taking with it into the subdural space some of the mucous lining of the nose. The cast off epithelium and mucus accumulate, producing a mucocele encroaching upon the brain tissue of the frontal lobe. As the process is slow, adjustment to the new conditions takes place and until the bony mass breaks through into the orbit pushing the eye forward, there are usually no symptoms. The proptosis attracts attention at once and the x-ray is employed to show the eburnated spindle of bone in the

ethmoidal mass projecting into the cranium. The original studies and operations for this disease were made by Cushing. The removal of the bony mass from the ethmoid was easy but the first two cases died as a result of infection from the nose spreading to the meninges through the opening in the dura made to eliminate the mucocele. This difficulty was overcome by transplanting a piece of the fascia lata to close the opening in the dura.

The comparatively recent demand of the profession that all doubt as to diagnoses shall be removed by autopsies is probably the most important reason why we seem to have new diseases on the one hand and fewer "inclusive diagnoses" on the other.

Only in recent years, have metastases from abdominal malignancies (especially those involving the spine), to the orbit with resulting proptosis, attracted attention. The history of a case will illustrate the features of this group. A young girl in apparent

Metastasis to orbit and cervical glands from malignant lymphoma involving the lumbar spine. The wound of the exploratory operation upon the orbit by Dr. Wm. McLean is seen.

health was the only person injured when the trolley in which she was riding, collided with a heavy truck. She was thrown against the seat ahead and at once suffered great pain low in the back. At the hospital, a fracture of the spine in the dorsal region was found by the x-ray. It did not seem to heal well and a fusion operation was done to insure support to the spine in the weakened area. Soon after this was done, the left eye protruded suddenly and a lump developed in the cervical lymphatic chain. An exploratory operation on the orbit and removal of a piece of the cervical gland provided material for the pathologist who found both were an unusual kind of lymphoma. She lingered for some time but the blood never gave a clue to the diagnosis. The fracture was finally recognized as a pathological break due to a malignancy involving the spinal column in the lumbar region. Autopsy was denied. Other parts of the body may show metastases as well, like the frontal bone, brain or the medulla of long bones. Recognition of these fractures as pathological is often obscured by history of intoxication, making it impossible to estimate the amount of force exhibited. Metastasis to the orbit also occurs in obscure abdominal malignancies even in young persons. The metastatic growth retains the characteristics of the original focus. A patient was operated for tumor of the left frontal lobe of the cerebrum and some of it was removed for the pathologist who suggested that a search be made for a focus elsewhere as the tumor was adenocarcinoma. At the autopsy, the original source was found in the abdomen, connected with the sigmoid flexure.

SPONTANEOUS LUXATION OF EYE

One of the rarest types of proptosis is spontaneous luxation of an eye. A patient of this type has normal vision and eye muscles. When he lies down the lowermost eye pops out, causing great pain. He has learned to replace it himself using a towel or bare fingers if nothing else is at hand. If the eyelids are drawn apart, luxation occurs at once. The camera was ready and the picture taken at once as the pain produced was too severe to allow to continue but for a few seconds. The explanation of such a case is unsatisfactory. Any optic nerve is long enough to allow the eye to come well forward but how can the eye muscles operate normally if lax enough to allow the forward movement of the globe? If the luxation is unilateral, pres-

sure upon the jugular vein of the same side may have no effect upon the eye but if the opposite jugular vein is compressed, the eye may jump out of place at once, indicating a narrowed venous channel on the affected side. These may be tested by tipping the head forward, back, laterally and reclining.

In conclusion I would like to emphasize a few points.

An acute proptosis with orbital inflammation and pain, is presumably an infection which has escaped from the ethmoidal cells and invaded the orbit.

An acute proptosis during the nursing period, in an artificially fed infant should be treated as scurvy until proven otherwise and an antiscorbutic given at once.

In children, a sudden proptosis with an enlargement in the temporal fossa appearing soon afterward, should make us think of chloroma and the diagnosis can be made certain by examination of the blood.

Progressive proptosis coming on soon after birth should suggest hemorrhagic disease of the newborn.

DISCUSSION

I am glad Dr. Maxwell brought up the question of proptosed eyes in Basedow's disease. This is probably the most common cause of proptosis next to orbital infections from the paranasal sinuses. Even in moderate displacements of the eye, the cornea may be irritated by exposure if the winking reflex is dull. The cornea is not moistened then as it should be, but if the proptosis present will allow occasional closing of the lids and protection during sleep, castor oil will protect the epithelial surface from drying and relieve the symptoms. If eyelids cannot cover the corneas, the use of the expansion shield or the moist chamber spectacle may be all that is required. Suturing the lids at the outer angles to shorten the fissure works well in selected cases but the patients do not like the appearance of the eyes after this has been done. "Rabbit eyes" is the name used for the narrowed fissures and the expansion shield or the moist chamber spectacle will take the place of the operation many times but nothing will please these very irritable patients as the protecting device is bothersome and the change in the facial appearance after the operation is repulsive. The extreme types are problems and operations of magnitude have been devised to overcome the inability of the patient to close the lids over the eyes. In this condition, the orbital contents are edematous, and the extrinsic muscles greatly thickened and fibrosed, so it is no wonder the eyes protrude. Why a neurovascular disease should produce an actual change in the tissues in the orbit is not explained.

The problems detailed in connection with exophthalmic goiter are similar to those of any condition causing the eyes to protrude. If the onset is gradual, the natural adjustment of the tissues is remarkable. But if the onset is sudden, there can be no delay in treatment particularly if at the same time, there is a purulent discharge from the conjunctival sacs. The protective measures recommended for Basedow's disease will be found useful in preserving the cornea from dessication and infection irrespective of the cause, but these methods are palliative only, and the disease itself must be controlled if the vision is to be saved.

Someone asked the difference between asymmetry and hyperostosis. Hyperostosis is a local acquired thickening of bone while asymmetry is a difference in the form of one-half of the face and is congenital. The difference between exostosis and hyperostosis seems to be the difference between a local outgrowth and a general thickening. The dividing line may not be easily drawn.

Another valuable suggestion has been made. In every case of sudden protrusion of an eye without local inflammation, especially after an accident, the stethoscope should be used to search for a bruit which will clear the diagnosis. Three-fourths of these are traumatic and the rest are spontaneous. Of this last group the greater number develop after the strain of labor and the minority are due to syphilis.

SPINAL ANESTHESIA

By EARL M. PECK, M. D.
Charleston, West Virginia

MANY methods pertaining to medicine and surgery that are in general use today have gone through discouraging stages in their development, and spinal anesthesia is no exception. My experience in the past three years has proven conclusively that we now have an agent, pontocaine hydrochloride (tetracain), which is highly reliable and lacks many of the undesirable features often associated with regional (spinal) anesthesia. In view of the present war situation, spinal anesthesia, just as intravenous anesthesia, assumes additional importance both because of its adaptability and wide range of usefulness, and also because of the ease of transportation, simplicity, and lack of need of elaborate anesthetic equipment.

So far as I know, the technique herewith presented is original, and since it has proven so satisfactory, I believe it should merit careful consideration.

PREMEDICATION

The night preceding the operation the patient is given phenobarbital grains 1½ to insure an undisturbed night's rest. Two hours before operation the patient is given a similar dose of phenobarbital. One hour prior to operation the patient is given morphine sulphate grain 1/6 and scopolamine grain 1/150 to promote peace of mind and lessen apprehension. Fifteen minutes prior to surgery, ephedrine grain ¾ is given to prevent the initial fall of blood pressure which usually accompanies any form of spinal anesthesia. In emergency surgery, of course, the phenobarbital is dispensed with, and if quick action of the morphine is desired it can be given intravenously.

The spinal anesthesia tray contains a 5 cc. syringe, a 22 gauge spinal needle (the type being relatively unimportant), a Kelly clamp, two medicine cups (one containing the antiseptic agent, and the other containing a small amount of 10 per cent glucose solution), several gauze sponges, and an ampoule containing 2 cc. (20 milligrams) of a 1% pontocaine solution.

THE AUTHOR

Dr. Earl M. Peck, graduate Medical College of Virginia, 1937; interned Charleston General Hospital; Residency in Surgery and Gynecology, Charleston General Hospital.

TECHNIQUE

Sterile gloves are donned, the tip is broken from the pontocaine ampoule with the Kelly clamp, and the required dosage (1 milligram per cubic millimeter) is drawn into the syringe. An equal amount of 10 per cent glucose solution is added and the two thoroughly mixed by shaking, following the method proposed by Sise. The patient is then placed on his side with hips and shoulders on the edge of the table and arms grasping the knees, "jack-knifing" the trunk as much as possible. The selected site and a large surrounding area of skin are then painted with the antiseptic agent. Formerly local infiltration with 1 per cent novocaine solution was used at the proposed site of injection, but during the past two years I have dispensed with this local anesthesia, since the spinal needle quickly inserted causes no more pain than does the local needle. After insertion of the spinal needle, the anesthetic solution is injected, the rate, contrary to popular opinion, not being particularly important, the needle is withdrawn, a sterile sponge placed on the site, and the patient placed flat upon his back with a large pillow beneath his head and shoulders. By the time the patient is prepared and draped the anesthetic has taken effect and the incision may be made. It takes about ten minutes, however, for the

anesthetic to become fixed in the spinal cord; therefore, if any other position such as dorsal lithotomy is desired the patient cannot be so placed until this time has elapsed.

This routine is followed because it lessens the time a naturally apprehensive patient is exposed to manipulative procedures and likewise decreases the possibility of breaking the needle in the back (an ever present though rather remote danger) since no barbotage is necessary. If this routine is followed, the actual act of administering the anesthesia should not take over one minute. The 22 gauge spinal needle has been chosen since it is large enough to permit easy manipulation and at the same time it is small enough to prevent the leakage of spinal fluid through the puncture wound in the dura with resultant postanesthetic headache.

The rationale of this technique concerns first, the normal curvature of the spinal column, and second, the relatively greater specific gravity of the pontocaine-glucose solution as compared to that of the cerebrospinal fluid (hyperbaric). A study of the spinal column reveals the third lumbar interspace to be situated most anteriorly, and utilization of this factor is of paramount importance in the usage of the hyperbaric anesthetic solution in securing the desired level of anesthesia. Likewise when the patient is lying flat as advocated, the anterior curvature of the cervical region theoretically should act as an effective barrier in preventing the relatively heavy anesthetic solution from extending up to the vital centers. This naturally excludes those who have some abnormality of the spinal tract and that certain rather fixed percentage of anesthetic fatalities in whom no demonstrable pathology can be found.

DOSAGE

In selecting the dose of tetracaine, cognizance is taken of several factors; the age, the condition of the patient, and the proposed operation, which of course entails consideration of the duration and the height of anesthesia.

In hernial and lower extremity operations 10 to 14 mgs. (1 to 1.4 cc.) of 1% pontocaine solution along with a similar amount (1 to 1.4 cc.) of 10% glucose solution are injected in the fourth lumbar interspace, the resultant level of anesthesia rarely ever extending above the umbilicus. In pelvic and lower abdominal operations, 12 to 20 mgs. (1.2 to 2 cc.) of the 1% pontocaine solution along with 1.2 to 2 cc. of 10% glucose solution, depending upon the duration of the proposed operation, are injected in the third lumbar interspace with the resultant anesthesia level rarely extending above the abdominal cavity. In upper abdominal operations a 16 to 20 mgs. (1.6 to 2 cc.) dose of the 1% pontocaine solution with a similar amount (1.6 to 2 cc.) of 10% glucose solution is injected in the first lumbar space, the anesthesia level extending to about the nipple line. Injections above the first interspace are undesirable for two reasons: (1) They do not produce a higher level of anesthesia (without placing the patient in the Trendelenburg position), and (2) the medulla spinalis extends to the first lumbar vertebra and higher injections may injure the neural elements. In rectal and genito-urinary surgery, a slight modification of this general technique has been adopted. After the introduction of the anesthesia, instead of placing the patient flat upon the table, he is placed in a semi-Fowler position. This position causes the anesthetic to become puddled in the lower lumbar and sacral area, a typical "saddle anesthesia" being achieved, the legs not being involved, and there is less liability of a spinal reaction on the part of the patient.

Throughout the entire operation blood pressure readings, pulse and respiration rates are recorded every five minutes by the anesthetist. Occasionally the blood pressure may fall below the desired level and, if so, it is bolstered by ephedrine administered intramuscularly. The usual fall in blood pressure is initial, however, and rarely represents over 15 millimeters of mercury. It remains at that level or increases slightly throughout the

remainder of the operation. It has been my experience that the bad side effects of spinal anesthesia, namely nausea with its consequent vomiting and retching, are due to, or, at any rate, always associated with a fall in blood pressure. Therefore, if the anesthetist is on the alert and administers a vasopressor just as soon as the pressure begins to fall, these annoying side effects can, in a large measure, be eliminated. If the patient does become nauseated, this can be easily and effectively combated by inhalations of pure oxygen. The patient's sensory perceptions are diminished by keeping the eyes covered with a moist towel and by placing cotton plugs in the ears. If the patient becomes apprehensive at any time during the operation, particularly toward the end, he is given morphine sulphate grains 1/6 intravenously.

Spinal anesthesia disappears in layers progressively from the splanchnic to the somatic, i.e., from the peritoneum to the skin. When the anesthetic unfortunately disappears prematurely so that difficulty is experienced in closing the peritoneum, relaxation can often be accomplished by injecting 1 per cent novocaine solution in the peritoneum about two inches from the margin of the incision. This can easily be done by injecting the novocaine through a long needle inserted superficially to the peritoneum with the finger beneath the peritoneum as a guide. The incision closure can then usually be completed satisfactorily.

AFTER-CARE

At the close of the operation the patient is thoroughly "blown-out" with a carbon dioxide and oxygen mixture with a view to the promotion of vascular aeration and the prevention of pulmonary complications. Formerly the patient was given carbon dioxide and oxygen inhalations for two minutes every two hours for two days. Now patients are merely asked to rebreathe in an ordinary paper bag several minutes every two hours, since this has been found as satisfactory as the carbon dioxide and oxygen inhalations.

It is a well-known fact that statistics can at times be manipulated and distorted until they will prove almost anything. We have complete records of our spinal anesthesia cases, but no statistical study will be presented at this time except to say that during the past three years, until May, 1942, over 2,300 spinal anesthesias have been given for major operative procedures without an anesthetic fatality, and with a very low percentage of failures. Failure here is taken to mean that supplementary anesthesia was required and was in most instances due to the operation being of greater magnitude than was anticipated when the spinal was induced. The reason that spinal anesthesia sometimes fails can be laid directly at the door of the anesthetist, or the surgeon performing the spinal anesthesia and here experience plays a major rôle. When I first began advocating this technique a certain number of failures were experienced. However, in the past 300 consecutive cases which I operated upon, and to which I gave the spinal anesthesia, none required supplemental anesthesia despite the fact that a number of them involved gastric, gall-bladder and common duct surgery.

Anesthesia supplemental to spinal is particularly easy to give, sodium pentothal administered intravenously or nitrous oxide being preferred; however, cyclopropane, ethylene, ether, local, or splanchnic block plus local anesthesia have all been used in our series with no demonstrable bad effects. Reliable and decisive statistics upon postoperative complications are, for a number of reasons, unavailable, but it has been our observation that "spinal cases" do much better than do "general cases" with regard to nausea and vomiting, general discomfort and length of convalescence. Similar findings have also been reported by Lehman and others.

DESIRABILITY

No other form of anesthesia so easily provides widespread muscle relaxation, intestinal immobility and easy recovery as does regional anesthesia. We have used spinal anesthesia

in patients from ten to eighty-three years of age, and even at times in the face of considerable shock. For the past three years I have used spinal anesthesia almost routinely in operations below the diaphragm, and have found it particularly advantageous in gall-bladder and common duct surgery, gastric resections and in intestinal work. Some of these procedures have lasted for as long as six hours under spinal anesthesia alone; however, we feel that the maximum average duration of pontocaine spinal anesthesia will be about three hours.

CONTRAINDICATIONS

The contraindications for spinal anesthesia are the same as for inhalation anesthesia. However, so many improvements have been made in its use in the past few years that it is felt by many experienced anesthetists that spinal anesthesia for surgery below the diaphragm is the anesthesia of choice regardless of the condition of the patient.

SUMMARY

A brief description of spinal anesthesia has been given. It is the author's opinion that if the technique be followed as outlined, an excellent regional anesthesia will be obtained.

REFERENCES

1. Lahey, F. H.: *Modern Development in Anesthesia and Anesthetists;* South. M. J., 31:29-35 (January) 1938.

2. Lehman, E. P., Risher, J. A. and Bippus, W. E.: *Spinal Anesthesia; a Study of the Postoperative Course;* Ann. Surgery, 106:118-134 (July) 1937.

3. Sise, L. F.: *Pontocaine-Glucose Solution for Spinal Anesthesia;* S. Clin. North America, 15:1501-1511 (December) 1935.

4. Sise, L. F.: *Pontocaine-Glucose Solution for Spinal Anesthesia; a Further Note;* S. Clin. North America, 16:1701-1711 (December) 1936.

5. Sise, L. F.: *Anesthesia for Poor Risk Patients;* S. Clin. North America, 18:841-850 (June) 1938.

6. Squires, Alden W.: *Regional Anesthesia;* New England Med. J., 221:896-901 (December 7) 1939.

7. Phillips, R. B.: *The Modern Technique of Spinal Anesthesia;* The Military Surgeon, 89:866-872, (December) 1941.

8. Peck, E. M.: *Spinal Anesthesia;* Charleston General Hospital Bulletin, Vol. III, Nos. 3-4 (July-October) 1940.

A PHYSIOLOGICAL APPROACH TO THE WATER BALANCE OF SURGICAL PATIENTS

By THOMAS L. HARRIS, M. D. and RALPH JONES, Jr.
Parkersburg, West Virginia

In 1831 Latta pointed out the necessity of replacing fluid lost from the body in the severe diarrhea of cases of Asiatic cholera.[32] Since that time, the physiologists and biochemists have taught us much of the functions of the water of the body, and of how the normal balance between water intake and water output is maintained. Clinical and laboratory research has shown us the extreme importance of disturbances in this balance to life and health. We have long realized that surgical patients who can take nothing by mouth for several days must be given fluid by some other route. However, we were content to control the amount of fluid, and the form in which it was given, largely by rule of thumb until the last decade. At that time the monumental work of Coller and Maddock and their co-workers[7 10] brought forcibly to our attention the necessity of very accurate control of fluid and electrolyte balance in our surgical cases and provided us with a logical approach to the practical aspects of this problem. During the last ten years the surgical journals have been filled with numerous excellent clinical and experimental studies on the various aspects of this problem. This work has rather radically revised the

THE AUTHORS

Dr. Harris, member of Founders Group, American Board of Surgery; Fellow American College of Surgeons; Fellow International College of Surgeons.

Mr. Jones, graduate West Virginia University, now a fourth-year student at University of Pennsylvania School of Medicine, Philadelphia, Pennsylvania.

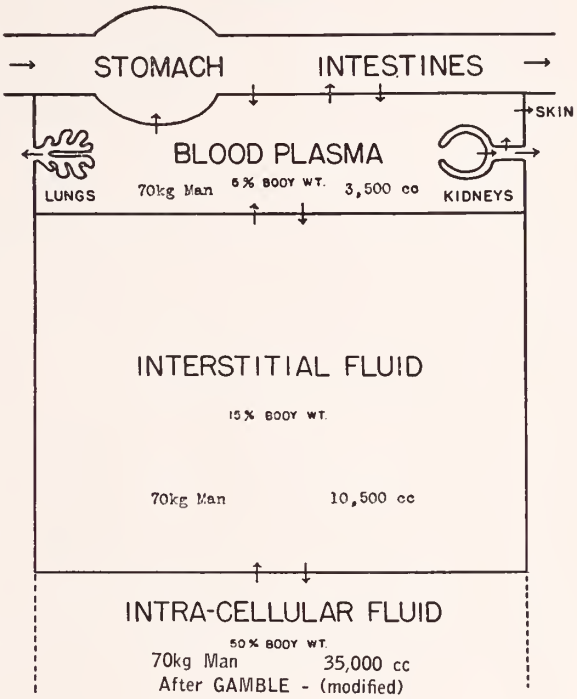
preoperative and postoperative treatment of surgical cases, and the value of the newer treatment methods has been clearly established.

It is our belief that the accurate control of fluid balance in surgical patients is strictly an individual problem which must be worked out from day to day for each case. We believe that the intelligent application of the basic principles which have been laid down for control of fluid balance is not possible unless one has a working knowledge of the normal physiology of the body water. Fluid replacement therapy can be managed successfully only if one thinks of each individual case in terms of the basic physiology involved. We feel that this physiology may have become vague in the minds of many of us and therefore we have endeavored to present a working, readable review of the basic physiological principles involved in the maintenance of fluid balance. This is followed by a partial review of the literature concerned with control of fluid balance in surgical cases. We wish to emphasize at the outset that we have discussed the physiological principles in question only with the aim of making them readable, understandable, and useable. Rigid adherence to accuracy of minute scientific detail has been sacrificed somewhat to this end. We have not considered electrolyte balance in this paper because of limitations of time and space. We must emphasize here that these two factors are so intimately related that attention to either fluid or electrolyte balance without due consideration of both is not justifiable in any case.

ESSENTIAL PHYSIOLOGICAL PRINCIPLES

Water normally constitutes about 70% of the body weight.[21 31 16] (Diagram 1). The average 70 kilogram man contains roughly fifty liters of water in his tissues. As proposed by Gamble, this [25 26] water may conveniently be considered as being divided into three compartments, separated one from another by living, semipermeable membranes. These membranes vary in their permeability to substances in solution but all are freely permeable to water. Thus the whole fifty liters of water in the various compartments is in direct communication across living membranes.

DIAGRAM 1



The vascular compartment contains the blood plasma.* Under normal conditions the plasma constitutes about 5% of the body weight.[16 28] An average 70 kilogram man then will have 3,500 cc. of plasma. The principal basic ion (cation) of this fluid is sodium; the principal acidic ions (anions) are chloride and bicarbonate. There is a very important amount of protein in the plasma.[4 5 16] Normal function of the cardiovascular system demands that the volume of fluid in this compartment, the plasma volume, be maintained constant within very narrow limits.

THE INTERSTITIAL COMPARTMENT

The interstitial compartment contains the interstitial fluid, which is the liquid that bathes the surface of the cells of the body tissues. This liquid normally constitutes about 15% of body weight and amounts to roughly 10 to 11 liters of water in a 70 kilogram

*The total blood volume is about 6.57 liters. The cells constitute 45% of this and are considered as part of the third compartment.

man.[16 28] This body of fluid is separated from the plasma by the capillary endothelium, a living semipermeable membrane. It is merely an ultrafiltrate of the plasma, which means that the solution is practically identical with the plasma in composition except that it contains only minute amounts of protein. The principal electrolytes here are the same as in plasma and they are present in essentially the same concentration.

The volume of fluid in this compartment is subject to somewhat wider variations than is the blood plasma. It may be considered as acting as sort of a reservoir whose volume fluctuates to maintain plasma volume.

THE INTRACELLULAR COMPARTMENT

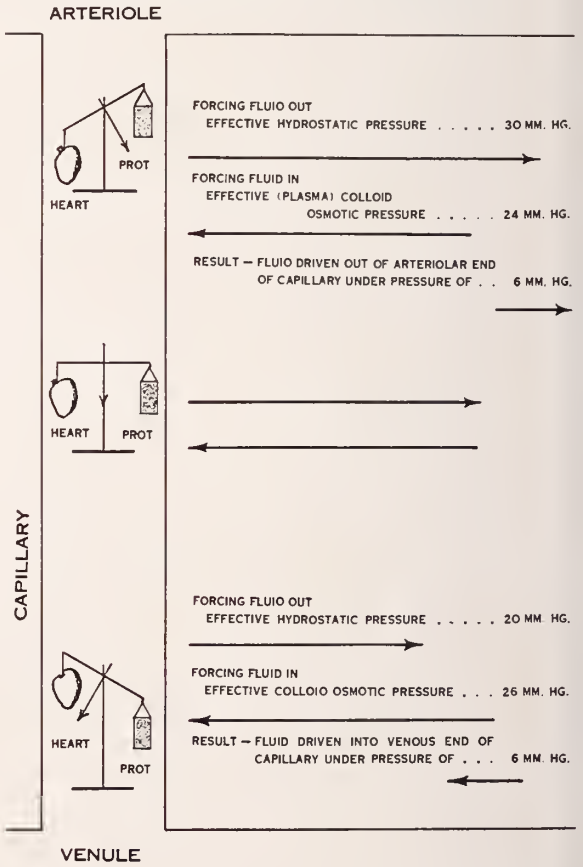
The intracellular compartment is the largest of the three compartments. Normally, the intracellular water amounts to 50% of the body weight, which in our 70 kilogram man would be about 35 liters.[16 28] The electrolyte composition of this fluid is radically different from that of the fluid of the other two compartments. Here the principal basic ions (cations) are potassium and, to a lesser extent, magnesium. Sodium and calcium are present in relatively small amounts. The principal acidic ion (anion) is phosphate, with a relatively small amount of chloride and bicarbonate. Here is found the highest concentration of protein. The total ionic concentration is somewhat higher than in the other two compartments.[5 16 28] This difference is due to the fact that the cell wall is a highly selective semipermeable membrane. For the life of the cell it is probably essential that this volume of fluid remain relatively constant.[16]

Viewing the relationship of the three bodies of fluid, we see that the interstitial fluid is a sort of middleman, interposed between the other two. It is in equilibrium with both of them. Any variation in the other two volumes of fluid must necessarily be reflected in this compartment, and, conversely, any variation in the interstitial fluid must effect to a greater or lesser degree the fluid in the other two compartments.[16 28]

THE EXTRAVASCULAR CIRCULATION

When we speak of the circulation of body fluids, most of us think only in terms of the circulation of blood in the cardiovascular system. However, the problem of fluid balance has made it important that we be aware of what may be called the extravascular circulation of body fluids. The great quantity of water in the body is not a stagnant pool by any means. Every day 3 to 4 liters of water enter and leave the body, and this fluid is transported from one area of the body to another by the cardiovascular system. It leaves this system at the capillaries to reach

DIAGRAM 2—REPRESENTATION OF STARLING'S HYPOTHESIS OF FLUID EXCHANGE AT THE CAPILLARIES



the tissue cells, and to serve several definite physiological functions, and is later returned to the vascular tree. We will discuss the physiological mechanisms of this extravascular circulation in some detail, for a thorough understanding of these phenomena is essential to the problem with which we are concerned.

We realize that this material may be familiar to many, but we feel that its importance justifies review.

THE EXCHANGE AT THE CAPILLARIES*

The capillaries of the body are the physiologic areas of exchange of the blood vascular system. (Diagram 2) The endothelial wall of the capillaries is a living semipermeable membrane which is freely permeable to all electrolytes and to nonelectrolytes of small molecular size, but is impermeable to the protein of the plasma. Therefore, the concentration of the electrolytes, as sodium chloride, bicarbonate, and so forth, and of nonelectrolytes such as glucose, urea, and so forth, is practically the same on the two sides of the membrane, (i.e., in the plasma and the interstitial fluid). The osmotic pressure exerted by these substances is tremendous, being many times greater than the blood pressure, but it has no effect because it is equal and opposite on both sides of the capillary wall. The plasma protein also exerts an osmotic pressure of about 25 mm. Hg across this membrane.[6] Because the interstitial fluid contains only a minute amount of protein, this force is not balanced. The protein of the plasma, therefore, is constantly exerting a force across the capillary wall tending to pull water from the interstitial space into the cardiovascular system. This is the colloid osmotic pressure of the plasma and it is completely independent of the heart. This force tending to pull fluid into the cardiovascular system is opposed by the hydrostatic pressure of the blood. In the capillaries, the blood pressure is constant, the fluctuations of systole and diastole having been eliminated. Here the blood pressure (due to heart action) not only drives the blood forward, but also tends to force the plasma out of the capillaries into the interstitial space. A delicate balance exists between these two opposing forces in the capillaries. At the arteriolar end of the capillary, the hydrostatic pressure exceeds the colloid osmotic pressure by about 5 mm. Hg. Here protein-free plasma is constantly being forced out of the capillaries into the interstitial space. At the venous end of the capillary, the hydrostatic pressure has fallen below the colloid osmotic pressure of the plasma by about 5 mm. Hg,[18] and fluid is pulled into the capillary from the tissue spaces. There is, then, a constant current of fluid leaving the arteriolar end of the capillary. This fluid contains the food for the tissue cells. It bathes the surface of the surrounding cells and is returned to the vascular system at the venous end of the capillary, carrying the waste products of metabolism of the cells.

GUARD AGAINST DEPLETION OF PLASMA

We have long thought of this exchange at the capillaries as part of the transport mechanism for the processes of metabolism, but we must now realize that it serves other purposes. This arrangement also allows for the shift of water from one area of the body to another as needed in normal life, and provides a compensating mechanism which guards against depletion of plasma volume when body water is depleted by abnormal loss of fluid in vomiting, diarrhea, and so forth, and when fluid is withheld for long periods of time. In such cases the fluid lost from the body comes first from the plasma, for obviously the plasma is the portion of the body water which connects the water of the tissues with the external environment. Hence the water loss first effects the plasma volume. But since the fluid lost from the body (e.g., the gastro-intestinal secretions) contains no protein, the plasma protein becomes more concentrated as the plasma volume starts to decrease. As the plasma protein concentration increases, the osmotic pressure it exerts at the capillaries is increased. This causes more fluid to be pulled into the venous end of the capillary from the interstitial compartment, and decreases the amount leaving the capillary at the arteriolar end. Hence plasma volume is maintained, within limits, at the expense of the interstitial fluid.

*The essential information in this discussion is derived from Best and Taylor—"Physiological Basis of Medical Practice", and Landis[18] and Peters.[28]

Thus this balance at the capillaries places a large reservoir of fluid at the disposal of the cardiovascular system to prevent rapid depletion of blood volume by sudden abnormal fluid losses. Without this mechanism severe vomiting or diarrhea could result very rapidly and dramatically in shock and death.

When one realizes that all of this exchange of which we have spoken must take place in the 1 mm. length of the capillary, it would seem that we were making much ado over a very insignificant thing. Indeed, the total fluid exchange at one capillary in twenty-four hours is certainly quite small. But we must remember that the size of the entire capillary bed is enormous. Krogh has estimated that the average 70 kilogram man has some 6,300 square meters of capillary surface, or as Landis[18] states it, the endothelium of the capillaries is equal in size to a sheet one cell thick, three feet wide and four miles long. The amount of fluid filtered through such a surface in twenty-four hours under conditions as they exist in the capillaries would be enormous.

OTHER EXTRAVASCULAR CIRCULATION

Besides this extravascular circulation of fluid at the capillaries, an astonishing amount of fluid leaves the plasma to perform extravascular functions and is later reabsorbed into the vascular system without leaving the body. In the average adult, between seven and ten liters of nearly isotonic fluid are poured from the plasma into the digestive tract every twenty-four hours. All but about 100 to 150 cc. of this is reabsorbed in the lower gut.[5] All of this fluid must come from the three and one-half liters of plasma. It is obvious that this would be quite impossible without the readily available reservoir of fluid provided by the interstitial compartment, through the balance of exchange at the capillaries. It also emphasizes the danger of allowing the fluid in this area to be depleted by dehydration even though the extent is not sufficient to alter blood volume.

This is further emphasized when one thinks of the extravascular circulation of protein-free plasma which occurs at the kidneys. In the normal 70 kilogram subject, about 120 cc. glomerular filtrate is formed per minute. In twenty-four hours about 170 liters of filtrate leaves the plasma and passes into the glomeruli of the kidneys. All but about 1.5 liters of this filtrate is reabsorbed into the circulation as it passes down the tubules of the nephron.[9]

Obviously, these vital functions of the plasma in providing fluids essential to digestion and absorption of food and to excretion of metabolic wastes in the urine depend to a great extent on the interstitial fluid and the balance of exchange at the capillaries. It is little wonder that the depletion of fluid in the interstitial space and the plasma by dehydration has a very serious effect on the condition of the surgical patient.

With these basic principles in mind, let us now turn our attention to question of water balance *per se* of the normal healthy adult.

Water balance refers to the equilibrium between the water intake and water output of a living organism. It is intimately related to electrolyte balance, which means the maintenance of a normal concentration and proportion of electrolytes in solution in the body fluids. In the normal healthy individual both of these are maintained remarkably constant with little conscious effort.[31] We will consider in detail the water balance of the normal healthy adult and the physiological processes concerned in water balance, that we may have a firm foundation for thought when we seek to control this balance in clinical cases.

WATER INTAKE

In health, all water taken into the body enters by way of the gastro-intestinal tract. The healthy adult of average size doing moderate work at comfortable temperatures ingests from two to three and one-half liters of water per twenty-four hours.[5 6 9] From 800 to 2,000 cc. is consumed in the form of fluids, and the rest is contained in or derived from solid food.[9 10] Solid food provides water in two ways. Most foods contain about 80%

water as such, and this is liberated in the digestive tract. Solid food also provides the body with water as an end-product when it is oxidized in the body. It is rather surprising to find that each gram of food eaten provides 0.9 gram water.[9 10] Coller and Maddock[9] show that the average hospital maintenance diet furnishes from 1,100 to 1,500 cc. of water daily, and a soft diet yields about 500 cc. daily.

OUTPUT

Water normally leaves the body through evaporation from the lungs and skin, and by excretion of urine by the kidneys. In leaving the body by these routes, the water serves two different and highly important physiological functions; the excretion of wastes and control of body temperature through dissipation of metabolic heat.

Water is lost from the skin and lungs by a process of evaporation from a moist surface.[2 3] This process occurs constantly even in the complete absence of any visible perspiration, hence it is called insensible perspiration. Whenever water evaporates it absorbs heat. Water lost from the body surface by evaporation absorbs heat from the body, and this constantly acting process thus serves the important physiologic function of dissipating heat liberated by the chemical reactions of metabolic processes.[3] Under normal conditions this process accomplishes about 25% of the heat loss necessary to maintain a constant body temperature. The remaining 75% is accounted for by loss of heat by radiation, convection and conduction.[2 3 4] It is important to remember that this is the only important mechanism for heat loss over which the body has control. Hence this mechanism is the body's "safety valve" for control of body temperature. Thus when fever or physical exertion increases the amount of heat which the body must dissipate, perspiration increases and becomes visible and the amount of water evaporated rises. Likewise if the environment is very hot and the atmosphere humid, the heat that can be lost by radiation, convection and conduction is decreased and the body must speed up the vaporization process to compensate, if body temperature is to remain normal.[2 3]

It is highly significant that this constantly acting process of water loss has priority rights on available body water over the kidney.[20 25 10 32] It occurs relatively undiminished in cases of dehydration and will continue even when there is inadequate water available for urine formation. Practically complete anuria will result in cases of severe dehydration, but water will continue to be vaporized from the skin and lungs.[32]

The healthy adult living at comfortable temperatures without visible perspiration will lose from 1,000 to 1,500 cc. fluid per day by this route.[10] The amount varies with body temperature, atmospheric temperature, and humidity.

THE URINE

Water excreted as urine by the kidneys serves the function of carrying the waste products of metabolism out of the body, and this is the only means the body has of eliminating metabolic wastes in appreciable amounts. In order to perform this function adequately, the normal kidney at maximal efficiency must have about 500 cc. of water[28] per 24 hours. If less than this amount of water is available for excretion by the kidney, waste retention occurs, and prerenal azotemia develops and may proceed to uremia in time. It is exceedingly important to realize that any degree of renal damage increases this minimal fluid requirement.

TABLE I*—WATER BALANCE OF NORMAL HEALTHY ADULT

Available Water	
Water drunk	1200 cc.
Food, diet, or body substance-water content	1000 cc.
Water of oxidation	300 cc.
Total	2500 cc.
Water Excreted	
Water of Urine	1200 cc.
Water of Stool	100 cc.
Water vaporized	1200 cc.
Total	2500 cc.

The normal healthy adult excretes from 700 to 2,000 cc. of urine per twenty-four hours.[4 16] This varies directly with the fluid

*After Coller and Maddock.

intake and state of hydration of the patient, and tends to vary inversely with the amount of water lost by vaporization.

The water lost in the stool is negligible, amounting to 75 to 150 cc. per day.[10]

Coller and Maddock have presented an excellent summary of the water balance of the normal adult as is shown in Table I. In a normal healthy adult, if stress is placed on this balance no appreciable alteration of body water occurs. For example, if one loses an excessive amount of water by perspiration during strenuous exercise, the kidneys conserve water by excreting a smaller volume of urine with a high specific gravity, and a demanding sensation of thirst increases intake to meet the increased fluid requirement. If, on the other hand, one drinks an excessive amount of liquid,[4, 17] the kidneys compensate by excreting a large quantity of urine with a low specific gravity.

From this discussion, two important points are obvious. The first is that the kidney furnishes the compensatory mechanism which prevents rapid depletion of body water when the normal ratio of intake to output is disturbed. It does so by altering the concentration of solids in the urine. Obviously the ability of kidney thus to protect the body depends upon its ability to concentrate and dilute urine. We must ever keep in mind that this function is one of the first lost in renal disease, and especially in the near-inevitable loss of renal parenchyma that comes with the benign arteriosclerosis of advanced age. Hence we must realize that as age increases, the margin of safety between dehydration and prerenal azotemia on the one hand, and edema on the other, is progressively diminished as the ravages of advancing age decrease renal parenchyma. The second important point is, that since the specific gravity of the urine is a measure of the concentration of solids in that urine, we have a very simple, cheap and reliable test which indicates the state of hydration of our patients. The urine volume in twenty-four hours and its specific gravity are an accurate measure of the degree to which the kidney must compensate to maintain body water constant, or at least to try to do so. Hence here is the most valuable single tool we have to indicate the fluid needs of a patient and the effectiveness with which we meet those needs. But we must keep ever in mind that this is true only if the kidneys are able to concentrate and dilute urine. The presence of lowered renal function of any degree alters results with this test so that exceedingly careful interpretation is necessary. Hence this test, as all other laboratory tests, merely augments the clinical information and must ever be interpreted in light of the entire clinical picture.

With this physiologic background well in mind, let us now turn our attention to the more specific problem of the water balance of surgical cases. Here we plan to review some of the literature that deals with this subject, and certain rules for maintenance of water balance in surgical cases are presented. We would emphasize at the outset that these are generalities which are not to be considered as fixed and rigid rules to be followed to the letter in all cases. They are rather the basis for thought in each case and are to be varied to meet the specific needs indicated by the clinical course and laboratory findings in each individual patient.

WATER BALANCE OF SURGICAL PATIENTS

Any conscious patient who can take fluids by mouth as desired and retain them will maintain his fluid balance if his renal and cardiac functions are adequate, his plasma protein level is normal and he does not suffer from uncontrolled diabetes mellitus, diabetes insipidus or Addison's disease. But the surgeon is repeatedly faced with the patient who can take nothing by mouth for a considerable period of time. It is then his full responsibility to provide an adequate fluid intake to maintain body water constant and to provide readily available water in adequate quantities to allow for heat dissipation and urine formation. It is with this patient that the subsequent discussion is concerned.

OUTPUT

Coller and Maddock[9 10 11] have shown that "surgical patients who have no particular tax on their heat dissipating mechanism", i.e., "who are in comfortable environmental circumstances, and whose progress is uncomplicated by fever or hyperthyroidism" lose the normal 1,000 to 1,500 cc. of water per day by insensible perspiration. Patients whose progress is complicated by a hot, humid environment, by fever, or by hyperthyroidism lose a minimum of 2,000 cc. per day by this route. Wassel[32] found that in hot, humid weather patients will produce 2,000 to 5,000 cc. of perspiration daily. This occurs with visible sweating. If this loss is not accounted for in the fluid supplied, it is obvious that the patient will be rapidly dehydrated. This factor has long been neglected by the clinician, and ill effects have doubtlessly resulted many times. When one remembers that loss by this route has priority rights over the kidney on water available for excretion, it seems that here lies the logical explanation for many of the cases of so-called "reflex" or "toxic" suppression of urine. In reference to this, Maddock[22] speaking of surgical cases, says: "It is a sign of progress that (with controlled fluid therapy) one sees less and less of the old phrase, 'toxic suppression of kidney function.' "

These figures hold for the postoperative days of convalescence, but we should remember that perspiration is usually increased during a major surgical operation. The patient is in a hot operating room and subject to a shocking procedure which frequently lasts several hours. We can safely assume that an increased amount of fluid will be lost during the operation and the immediate postoperative period. Indeed it has been shown that on an average, one liter of fluid is lost from the skin during major operations and the four-hour postoperative period.[10] Frequently this loss may be more than a liter. Hence there is very likely to be more than two liters lost from the skin on the day of operation.

Each day, the plasma carries 35 gm. of waste material to the kidneys for excretion,[20] and the kidneys must have adequate water in order to remove it from the body. We are indebted to Lashmet and Newburgh for quantitative information on this subject. They have shown that for the normal kidney, which can concentrate urine to a specific gravity of 1.032, 500 cc. of urine per 24 hours is adequate; if for any reason the kidneys can only concentrate to a specific gravity of 1.015-1.010, 1,500 cc. of water are necessary to remove the 35 gm. of waste. It is reasonably safe to look for 1,000 cc. of urine of a specific gravity over 1.014 in the sick surgical patient.[9 25 26] This must be provided in the intake, and if there is any indication of kidney damage, 1,500 cc. should be the goal.

We would emphasize here that one of the surest signs of dehydration is a small volume of urine, usually having a high specific gravity;[33] and that the quantity and specific gravity of urine are one of the most reliable indices of the state of hydration of the patient.

TABLE II*

BASIC FLUID REQUIREMENTS OF SURGICAL PATIENTS

Uncomplicated Case	
Water for vaporization	1000-1500 cc.
Water for urine	1000-1000 cc.
	2000-2500 cc.
Complicated Case (Fever, hot and humid weather, hyperthyroidism)	
Water for vaporization	2000-2000 cc.
Water for urine	1000-1500 cc.
	3000-3500 cc.

Coller and Maddock have summarized the basic fluid requirements of surgical patients as is shown in Table II. Here we see that the uncomplicated case must be provided 1,000 to 1,500 cc. of water for vaporization and 1,000 cc. for urine formation. The complicated case must be provided a minimum of two liters of water for vaporization, and more if the clinical picture indicates it, plus 1,000 to 1,500 cc. for urine formation.[11] To this, we feel, should be added a liter of fluid given immediately preoperatively or while the patient is on the table.

*After Coller and Maddock.

To these requirements must be added any fluid lost from the body by abnormal routes, such as vomiting (or gastric lavage), intestinal or biliary fistulas, drainage from an ileostomy or by continuous drainage with a Wangensteen apparatus.

The gastro-intestinal secretions, except the saliva, are to be considered, for practical purposes, isotonic (i.e., of the same electrolyte concentration) with the plasma.[5 15 41] They are derived from the plasma, and normally they are reabsorbed in a short time with no net loss of water or electrolyte to the plasma. Obviously, when these secretions are withdrawn from the gut by any abnormal means, there will be a rapid depletion of body water and electrolytes. Hence they must be replaced volume for volume by isotonic parenteral fluids if water and electrolyte balances are to be maintained.

It is evident that we must measure all fluids removed from the gastro-intestinal tract and replace them volume for volume with an isotonic salt solution. This is to be added to the amount provided to allow for perspiration and urine formation.

INTAKE—THE CHOICE OF FLUIDS

The question to be answered now is: What fluids shall we give these patients to replace the losses by various routes?

The first point which must be mentioned, as emphasized by Orr,[26] Latimer,[19] Coller and Maddock,[7 11] and Jones and Eaton, is the dangers of physiologic saline solution. We have long realized the relationship of a high salt intake and edema in renal disorders. We have been shown that the body cannot excrete sodium chloride as rapidly as water, potassium chloride, and so forth.[16] Yet we have continued to give patients who can poorly tolerate even mild degrees of edema, liter after liter of physiological saline, or of hypertonic 5% or 10% glucose in normal saline. Many of these patients had the perfect background (i.e., nitrogen starvation, anemia, nitrogen retention, hypoproteinemia, or proteinuria) for the development of edema, and some did develop clinically detectable edema. Probably many more were able, in time, to throw off a subclinical edema. We must remember that a high salt, high water intake is one of the necessary factors in the development of edema, and that sodium chloride is essential. The body will not store water in the interstitial space unless it has adequate sodium chloride to make that water isotonic.[28 16] Moreover, when an excess sodium chloride is introduced into the body of a patient in poor general condition, it is retained for some time.[11] When this sodium chloride is retained, water is retained with it.

AMOUNT OF SALT NEEDED

The body needs from four to five grams of salt daily.[5] Any excess that is introduced means that an excess is carried to the kidneys for excretion. This increases the amount of waste which the kidneys are called on to excrete and increases the volume of urine necessary. One liter of physiologic saline contains 8.5 grams of salt. If we give a patient, who is not losing electrolytes, three liters of normal saline in twenty-four hours, twenty grams of waste are added to the thirty-five grams which the kidney must excrete. Obviously, we are putting a considerable strain on the kidneys.

I would not give the impression that the patient needs no saline. The average salt requirement is about 4.5 to 5 grams daily in health,[5] and this must be supplied. Moreover, when fluids are lost from the gastro-intestinal tract, they are practically isotonic by virtue of their high salt content. These fluids vary in the amounts of sodium and chloride which they contain. Loss of different fluids cause depletion of different ions in the plasma. In cases in which gastric juice is lost, chloride loss is high and sodium loss relatively small. The result is an alkalosis. Total electrolyte depletion in such a case is less because carbon dioxide is retained and replaces the chloride ion temporarily. Loss of fluid from the small intestine, or of bile, or pancreatic juice entails a greater loss of sodium than of chloride, and severe dehydration, plus greater total electrolyte depletion

results.[16] Acidosis and dehydration are produced in such cases. To restore normal electrolyte balance in one case, the body needs more chloride than sodium; in the other case, more sodium than chloride is needed. But in either case, if the kidneys are functioning properly and have adequate water to work with, intravenous sodium chloride will restore electrolyte balance to normal.[11 16] This occurs because the kidney will conserve the ion needed and excrete the excess of the other ion.

Saline fluids have a definite place in water balance therapy to meet the daily salt requirement, to replace drainage from the gastrointestinal tract, and to correct mild electrolyte disturbances. Our plea is that saline never be given in excess of need as established on the basis described.

SUBSTITUTE FOR SALINE

The fluid to be used in place of saline is five or ten per cent glucose in distilled water. Excess saline predisposes to edema, but with glucose in water, there is very little danger of water retention.[8 11 14 16 21] The glucose is oxidized by the body, furnishing badly needed calories, prevents ketosis and spares body protein in the fasting patient.[29] As it is oxidized, it releases water which is readily available for excretion by the skin and kidneys.[10] It provides no extra waste products for the kidney to excrete; in fact, it decreases the amount of waste by its protein-sparing action. Obviously, then, this is the fluid of choice to provide the water for urine and for vaporization. Coller and Maddock[7 11] recommend that it be given as 5% unless there is some special demand for calories, as in hyperthyroidism.

We shall then give our fluids as is shown in Table III.

In the uncomplicated case 1,500 to 2,000 cc. of 5% glucose in water, and in the complicated case 2,500 to 3,000 cc. of glucose 5% or 10% in water plus 500 to 1,000 cc. of physiologic saline or Ringer's is given to provide for urine and perspiration daily. In intestinal drainage cases, physiologic saline or Ringer's solution in amounts equal to the fluid loss from the intestinal tract is added to the basic needs. It is usually advisable to give the saline fluids as 5% glucose in saline, in order to keep the caloric intake as high as possible.

TABLE III*—POSTOPERATIVE INFUSION THERAPY TO MEET BASIC REQUIREMENTS

	Uncomplicated Case	Complicated Case
For Perspiration:		
Glucose 5% (in water)	500 cc.-1000 cc.	1000 cc.
Normal saline (supplies daily requirement of 4.5 gm)	500 cc.	1000 cc.
	1000 cc.-1500 cc.	2000 cc.
For Urine:		
Glucose 5%	1000 cc.	1000 cc.-1500 cc.
Total	2000 cc.-2500 cc.	3000 cc.-3500 cc.
Plus NaCl or Ringer's—volume for volume in case of any fluid loss from the intestinal tract	x	x

These fluids should be given slowly, when given in such large amounts, to prevent overloading the cardiovascular system. Coller and Maddock[7 11] recommend these rules:

1. If small volumes, 3,500 cc. or less are to be given, they are given at the rate of 300 to 500 cc. per hour. (Or 5 to 8 cc. per minute equals 80 to 120 drops per minute).

2. If more than 3,500 cc. are needed, the administration is placed on a twenty-four hour basis and 200 cc. given per hour.

3. Ten per cent glucose should be given at 150 to 200 cc. per hour, since Winslow[34] demonstrated that with slow administration 95% is retained and glycosuria is minimal.

Whenever possible fluids should be given in broken quantities during the day, with an hour or so rest at noon. Also, eight hours should be left free at night for undisturbed rest whenever feasible. The fluids should be warm when started, but no special attempt need be made to keep them at body temperature. But a hot water bottle may be laid over the rubber tubing on the bed. The special need for slow administration of fluids to patients with cardiac conditions is constantly emphasized in this connection.[7 11]

Coller and Maddock and their associates[11] advise a very sound routine of infusion

*After Coller and Maddock.[7 11 22 23]

therapy for cases in which Wangensteen drainage is needed. On the day that continuous suction therapy is started they give 1,000 cc. of Ringer's solution during the first twenty-four hours, over and above other fluid requirements, to prevent an initial electrolyte depletion. At the end of twenty-four hours the drainage is measured, and the volume drained is replaced during the next twenty-four hours. This volume for volume replacement is continued for the duration of therapy. Thus, by measuring the drainage of the previous day, the volume of isotonic fluid necessary to compensate is determined, and one knows just how much fluid to order for the next twenty-four hours. To this rule, they add the precaution that the amount of isotonic fluid given to replace loss by continuous suction should never be less than 500 cc. per twenty-four hours, even if less than that amount was drained the previous day. Strict adherence to these rules has been found to increase the value of continuous suction therapy, by eliminating its principal hazard.

DEHYDRATION AND ELECTROLYTE DEFICIENCY

Another problem frequently presents itself to the surgeon in the form of the patient who is admitted for surgery in a state of dehydration and electrolyte depletion. Dehydration is seen most frequently as the result of severe sustained vomiting in surgical cases, and in medical cases it more frequently results from diarrhea. It is practically always coupled with an electrolyte deficiency.[21]

When a patient is becoming dehydrated by a condition such as sustained vomiting, plasma volume is maintained, within limits, at the expense of the interstitial fluid, as was mentioned earlier. The fluid lost is being drawn from a ten-liter reservoir. Thus, when a patient shows clinical signs of dehydration, he has lost a large amount of water and electrolytes. Latimer[19] states that when a patient shows the clinical picture of dehydration, he has lost water equal to about 6% of body weight. It is most often accompanied by a lowered blood chloride. Saline solutions should be given in amounts adequate to restore electrolyte balance, and the rest given as 5% glucose. This should be given in addition to the fluids necessary to provide for perspiration and urine formation. It can be given in one day if the cardiovascular system is sound, but should be given over two days if there is reason to fear overloading the circulatory system.

AMOUNT OF FLUID NEEDED

The exact amount of fluid to be given can be simply and rapidly calculated: 6% of the body weight in kilograms, either estimated or determined, gives the total amount of fluid needed. Thus, with the average 70 kilogram man, 4,200 cc. are needed to rehydrate him. Since dehydration is usually accompanied by a lowered plasma chloride we are usually faced with the additional problem of restoring this factor to normal in these cases. Coller and Maddock and their associates[8] have studied this problem and have devised an excellent working formula to guide us in such cases. Their formula states that for every one hundred milligrams the plasma chloride is below the normal value of 560 mg. per cent, 0.5 grams of NaCl per kilogram body weight must be given to restore the body chlorides to normal. Thus if, in a 70 kilogram man, the plasma sodium chloride is found to be 460 mg. per cent (100 mg. below normal), then 1 x 0.5 x 70 = 35 gm. of NaCl are needed to replenish the body chlorides. Since physiologic saline contains 8.5 gm of NaCl per liter, 35/8.5 x 1000 = 4350 cc. of physiologic saline must be given to this man. Since, as was shown above, this man needs 4,200 cc. of water to rehydrate him if he is dehydrated, then all of his fluids should be given as physiological saline. If, however, this patient's plasma chloride had been found to be only 50 mg. per cent below normal (e.g., 510 mg. per cent), then he would need only 0.5 x 0.5 x 70 = 17.5 gm of NaCl, or 2,100 cc. of physiological saline. In this case, the patient should get 2,100 cc. of saline and 2,100 cc. of glucose in water to restore his water and electrolyte stores to normal. To this must be

added the daily fluid requirements of 2,000 cc. of glucose in water plus 500 cc. of saline. This total volume of 6,500 cc. of fluid can be given in 24 hours unless there is evident danger of overloading the cardiovascular system.

It is obvious that when dealing with such large quantities of fluids and electrolytes reasonable care and judgment must be exercised. The fluids must be given slowly and timed carefully. The plasma chloride should be followed at intervals and should be supplemented by determination of the plasma protein and hematocrit or hemoglobin determinations to avoid flooding the patient. We also feel that even if plasma chloride is near normal in a patient who shows the clinical picture of dehydration, never less than half of the fluid given to restore body water should be given as saline. This water is given to be retained by the body and it must be made near isotonic with salt if the body is to retain it. This fluid should not be given as glucose in saline for giving a hypertonic solution will effect a temporary undesirable osmotic gradient at the capillaries and further deplete extravascular water for a short time.

When dehydration has progressed far enough that clinical symptoms appear, it is rarely missed by competent surgeons. But we wish to stress the fact that the presence of subclinical dehydration preoperatively has probably been the cause of many of our cases of surgical shock. The dehydrated patient is in the most favorable condition possible for the development of shock, and likewise is in the poorest possible condition to withstand hemorrhage of any degree.[7 24] As we mentioned before, when a patient is losing fluids from the gastro-intestinal tract by vomiting, or other measures, he is draining fluid from the ten-liter reservoir of the interstitial space. Loss of a quantity of water equal to 6% of body weight has usually occurred when clinical symptoms are manifest. This means that at least 3 or 4 liters of fluid must be pulled out of the reservoir before the full clinical picture is produced. Is it not likely then, that patients with negative balances of 1 or 2

TABLE IV—SUMMARY OF THERAPY*

For	Requirement	Fluids Given
1. UNCOMPLICATED CASE (Basic Needs):		
Vaporization	1000-1500 cc./24 hrs.	500-1000 cc. 5% glucose in water 500- 500 cc. physiologic saline or Ringer's
Urine formation	1000 cc./24 hrs.	1000 cc. 5% glucose
2. COMPLICATED CASE (Basic Needs):		
Vaporization	2000 cc.	1000 cc. 5% glucose 1000 cc. physiologic saline or Ringer's
Urine Formation	1000-1500 cc.	1000-1500 cc. 5% glucose

3. DEHYDRATED PATIENT (Preoperative therapy):
   a. Basic needs as above.
   b. Volume of water to rehydrate body—calculated by taking 6% of body weight in kilograms.
   c. This is given as sodium chloride in quantity adequate to raise a lowered chloride to normal. (Calculate by formula of Coller and Maddock).
4. ADDITIONAL FLUIDS:
   a. To the basic requirements are added volume for volume replacement of fluid lost from the gastro-intestinal tract by any means. This is replaced by isotonic sodium chloride or Ringer's.
   b. Fluids shall be forced preoperatively and every attempt possible shall be made to prevent dehydration by preoperative treatment.
   c. A liter of fluid should be given on the table if the operation is an extensive one. This may well be given as blood and saline, or saline and glucose as indicated by the individual case.

*Modified after Coller and Maddock.

liters of water are often missed? Sending such a patient to surgery where he will be dehydrated by one liter or more in from one to three hours is bound to have severe ill effects.[26]

In this connection, Orr[26] calls our attention to the likelihood of dehydrating patients by routine preoperative treatment. He points out that frequently patients are allowed nothing by mouth, solid or liquid, for several hours preoperatively. Relatively severe catharsis is utilized to clean out the gastrointestinal tract, and is supplemented by one or more preoperative gastric lavages. Thus, a previously well-hydrated patient may be sent to the table with a negative water balance of at least a liter of water where he will lose more water as perspiration plus considerable blood, while undergoing a shocking procedure, before he receives any fluid. Obviously, such procedure provides the perfect setting for the syndrome of cardiovascular collapse which we call shock. Orr[26] recommends that all precaution possible be taken to avoid this situation. He advocated urging the patient to drink at least 3,500 cc. of fluid in the twenty-four hour preoperative period, and he believes the patient should be allowed water up until three hours before surgery. If the patient does not manage this amount, the deficit should be made up by infusion therapy. Orr also strongly recommends that a liter of saline be given during the operation, and suggests that hypodermoclysis in the thighs is a convenient route of administration to a patient on the table.

The water balance of the surgical patient and the rules which may serve as guideposts for the surgeon when he must regulate this balance may be summarized as is shown in

FIG. 3—DIAGRAMATIC SUMMARY OF INFUSION THERAPY IN SURGICAL PATIENTS

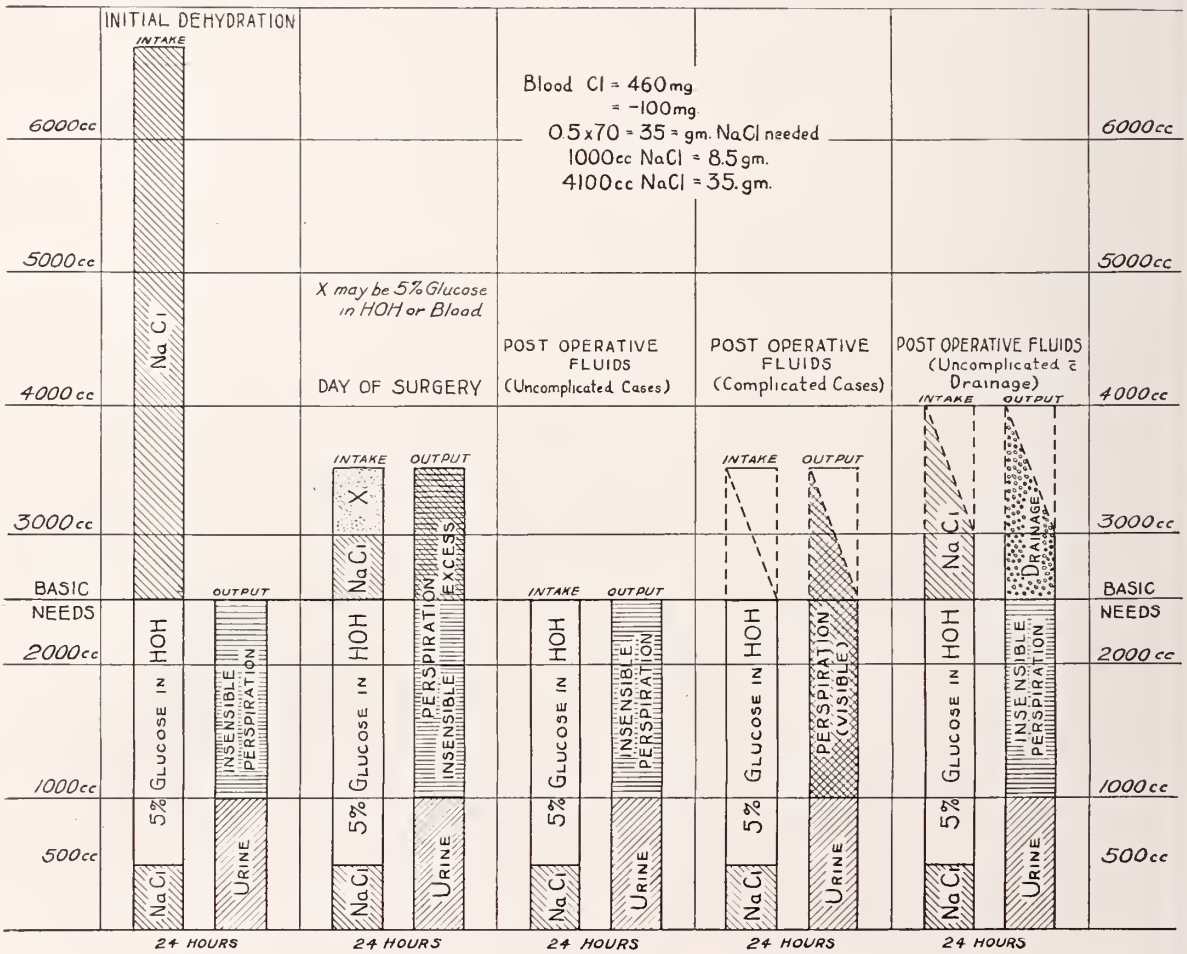


Table IV, modified from Coller and Maddock. We have also attempted to picture a summary of the fluids to be given to patients in the various conditions encountered in practice. This is shown in bar graph form in Figure 3. The purpose which the fluids given are to serve in the body is indicated by a second bar graph in each situation represented.

The maintenance of water balance by infusion therapy is essential as long as the patient is unable to take fluids by mouth. We should always remember, as Coller and Maddock emphasize, that the best way to maintain fluid and electrolyte balance is by giving food and fluid by mouth. Parenteral therapy tides over an emergency; the sooner a patient is restored to food and drink by mouth, the greater are his chances for recovery.[11]

CONCLUSION

(1) A summary of normal physiology which we consider essential to understand water balance has been discussed.

(2) We have presented the application of these principles to the practical problems of the control of water balance in surgical patients.

(3) We have discussed the fluids of choice for parenteral administration, emphasizing the value of glucose in water and the dangers of physiological saline in water balance therapy.

BIBLIOGRAPHY

1. Adolph, E. F.: *Metabolism and Distribution of Water in the Body and Tissues;* Phys. Rev., 13:336, 1933.

2. Barbour, H. G.: *The Heat Regulating Mechanism of the Body;* Phys. Rev., 1:295, 1921.

3. Barbour, H. F. and Hamilton, W. F.: *Heat Regulation and Water Exchange;* Am. J. Physiol., 74:204, 1925.

4. Best, C. H. and Taylor, N. B.: *The Physiological Basis of Medical Practice, Second Edition;* Williams and Wilkins Co., Baltimore, Maryland, 1937.

5. Bodansky, Meyer: *Introduction to Physiological Chemistry, Fourth Edition;* John Wiley and Sons, Inc., New York, 1938.

6. Cantarow, A.: *Water Balance; Edema and Dehydration;* Internat. Clin., 1:266, 1939.

7. Coller, F. A., Dick, V. S. and Maddock, W. G.: *The Maintenance of Normal Water Exchange with Intravenous Fluids;* J. A. M. A., 107:1522, 1936.

8. Coller, F. A., Bartlett, R. M., Bingham, D. L. C., Maddock, W. G. and Pedersen, S.: *The Replacement of Sodium Chloride in Surgical Patients;* Ann. Surg., 108: 769, 1938.

9. Coller, F. A. and Maddock, W. G.: *The Water Requirements of Surgical Patients;* Ann. Surg., 98:952, 1933.

10. Idem: *Water Balance in Surgical Conditions;* Internat. Clin., 3:190, 1934.

11. Idem: *Water and Electrolyte Balance;* S. Gyn. Ob., 70:340, 1940.

12. Erlanger, J.: *Blood Volume and Its Regulation;* Phys. Rev., 1:177, 1921.

13. Elkington, J. R., Gilmore, M. T. and Wolff, W. E.: *The Control of Water and Electrolyte Balance;* Ann. Surg., 110:1050, 1939.

14. Evans, J. A. and Shulman, H.: *The Danger of Forcing Fluids in Malnutrition;* Am. J. Med. Sci., 199: 237, February, 1940.

15. Gamble, J. L.: *Extracellular Fluid;* Johns Hopkins Hos. Bull., 61:151, 1937.

16. Gamble, J. L.: *Chemical Anatomy, Physiology and Pathology of Extracellular Fluid;* (lecture syllabus), Dept. of Pediatrics, The Harvard Medical School, 1939.

17. Idem: *Dehydration;* N. Eng. Med. Jour., 201: 909, 1929.

17a. Jones, C. M. and Eaton, F. B.: *Postoperative Nutritional Edema;* Arch. Surg., 27:159, 1933.

18. Landis, E. M.: *Capillary Pressure and Capillary Permeability;* Physiol. Rev., 14:404, 1934.

19. Latimer, E. O.: *Water Balance;* Am. Jour. Surg., 46:223, 1939.

20. Lashmet, F. H. and Newburgh, L. H.: *A Comparative Study of the Excretion of Water and Solids by Normal and Abnormal Kidneys;* J. Clin. Invest., 11: 1003, 1932.

21. Marriott, W. M.: *Anhydremia;* Phys. Rev., 3: 275, 1923.

22. Maddock, W. G.: *Fundamentals in Water Balance;* J. Urol., 39:444, 1938.

23. Maddock, W. G. and Coller, F. A.: *Water Balance in Surgery;* J. A. M. A., 108:2, 1937.

24. Moon, V. H.: *Shock and Hemorrhage;* Ann. Surg., 110:260, February, 1939.

25. Newburgh, L. H. and Wiley, F. H.: *Determination of Water Balance;* J. Clin. Invest., 10:723, 1931.

26. Orr, T. G.: *Water and Chemical Balance in Surgery of the Colon;* Am. J. Surg., 46:70, October, 1939.

27. Paine, J. R. and Armstrong, W. D.: *A Study of Fluid and Sodium Chloride Balance in Patients Treated with Continuous Suction Applied to an Indwelling Duodenal Tube;* S. Gyn. and Ob., 68:751, April, 1939.

28. Peters, J. P.: *Body Water;* Thomas Co., Springfield, 1935.

29. Ravdin, I. S., Stengel, A. and Prushankin, M.: *Control of Hypoproteinemia in Surgical Patients;* J. A. M. A., 114:107, January 13, 1940.

30. Ravdin, I. S., Thompson, W. D. and Frank, I. L.: *Effect of Hypoproteinemia in Wound Disruption;* Arch. Surg., 36:500, 1938.

31. Rowntree, L. G.: *The Water Balance of the Body;* Phys. Rev., 2:116, 1922.

32. Scudder, J.: *Shock, Blood Studies as a Guide to Therapy;* J. B. Lippincott Co., Philadelphia, 1940.

33. Wassel, G. K.: *Increased Vaporization of Water by the Postoperative Patient in Summer;* After Coller and Maddock.[11]

34. Winslow, S. B.: *Dextrose Utilization in Surgical Patients;* Surgery, 4:867, 1938.

The President's Page

The 1943 meeting of the West Virginia State Medical Association will be held in Charleston, May 17-18. The program will be streamlined on account of war conditions and all formal social activities will be curtailed. In other words, the two days will be devoted to scientific medicine and the speakers will be outstanding in their respective fields. *An intensive two-day postgraduate course* has been provided by your Scientific Committee. Make your reservations early.

Confronting the medical profession today as never before is the need for unity of thought and action; but somehow, due to petty jealousies, greed and selfishness, it has been almost impossible to get this great body of physicians to act with unanimity, and this very fact is the ammunition our so-called friends are firing into our ranks with deadly effect. Should organized medicine complacently sit by and await the fatal day without even registering a protest? Unless a militant leadership is provided, and unless you on the firing line can put aside petty things and join wholeheartedly, we may expect, and perhaps rightly so, to be taken over boot and baggage. When this time comes, and every evidence points to a rapid culmination, who will be the first to yell for help? What has organized medicine done to save us? The answer is no medical organization can do more than its membership provides, and our plight today can be summarized briefly as the result of our own stupidity and selfishness.

If the dollar mark has been our guiding star and has led us far afield, perhaps it is not too late to find again the paved highway—the only avenue that assures the American people a continued type of practice that has never been equalled in any other country.

There are certain reforms needed to meet the changing conditions which are both economic and social. Why not meet these conditions as an intelligent professional group? Why wait (and we have apparently done nothing else) until some government agency prescribes the remedy? Then it will be too late.

The Council has been asked to authorize the appointment of a fact finding or a planning committee. The duty of this committee will be to study all of the problems confronting the profession in West Virginia and render a report with recommendations. After the report of this fact finding committee is received, discuss it freely without injecting personalities into the discussion. Whatever the majority of the members agree upon, let's do it cheerfully and with a unanimity that will be a challenge to physicians in other states. If you need make a sacrifice, it will not be as exacting as that provided under any type of government regimentation.

Whatever the final decision, it is only fair to ask our allies, our tried and trusted friends, namely, the Woman's Auxiliary, to assist us in our program. We can count upon their wholehearted support.

West Virginia Medical Journal

Official Journal of
The West Virginia State Medical Association
302 Atlas Bldg., Charleston, West Va.

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Published monthly on the first day of the month, at Charleston, by The West Virginia State Medical Association.

Original articles are accepted on condition that they are contributed exclusively to the Journal.

Advertising rates furnished upon request. All advertisements must conform to the standard established by the Council of Pharmacy and Chemistry of the American Medical Association.

Address all communications to Business Manager, West Virginia Medical Journal, Box 1031, Charleston, West Va. Phone, Capitol 34-625.

SUBSCRIPTION $3.50 PER YEAR

Entered as second-class matter, January 1, 1926. Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917. Authorized July 24, 1919.

WHITHER MEDICAL EDUCATION?

While the outlook in medical education is somewhat beclouded, it appears practically assured that it will, to all intents and purposes, be directed by the armed forces for the duration of hostilities. It seems now that the course which will emerge from the multitude of plans considered and the many conferences held will be essentially as follows: The premedical college course will be cut to two academic years which will be "accelerated" or "telescoped" into at most 18 calendar months and probably into 15. The present acceleration of the four year medical curriculum into three calendar years will remain as at present. The period of intern training will remain at one year.

The physically fit male students will be in uniform, under a commanding officer, and will be soldiers assigned to college for "technical training" rather than students in uniform. These will consist of approximately 80% of the medical student body, the remainder being women and males physically unfit for military service. All in the Naval Medical Reserve will probably be required to become apprentice seamen, but those now in the Medical Administrative Reserve of the Army will probably be allowed to decide whether they will resign their commissions and accept actual induction as privates with full maintenance and tuition or retain their civil status and bear their own expenses.

While commissioned in the reserves, interns will apparently be on an inactive civilian status. In round numbers, the army will expect to be augmented by approximately 4,200 of each graduating class, the navy by 1,200, and the civilian physician population by 1,600.

The first complement of this number will be selected from a pool of approximately 30,000 presently qualified availables, the remainder of whom will enter the armed forces without hope of being admitted to a medical school until after the war. Any time elapsing between the completion of the premedical course and admission to a medical school will be spent in basic military training. Reasonable latitude will be granted to students in the choice of a medical school and likewise to a medical school in the selection of the students it will receive. Only four weeks per calendar year will be available for vacation (furlough). Screening will be carried on throughout the course, and culls who fall by the academic wayside will go back into the ranks on an enlisted status.

Obviously such a program, while apparently necessary in the war effort, will squeeze medical education into a strait jacket and can only result in the graduation of less well qualified physicians than has been the case for several decades past. It is fervently to be hoped that the prewar status of physician training can be resumed promptly after "cease firing" shall have been sounded.

ANNUAL MEETING IN MAY

Widespread approval has followed the decision of the Scientific Work Committee to hold the 76th Annual Meeting of the West Virginia State Medical Association at Charleston in May. The dates fixed (May 17-18)

do not conflict with any other convention in West Virginia or in any nearby state.

Charleston is probably more accessible at the present time to all the doctors in West Virginia than any other city in the state. Convenient train and bus service to and from Charleston provide adequate means of transportation to hundreds of doctors in the state, and good roads extend in every direction connecting the areas not served by railroads and bus lines.

The usual three-day meeting will be crowded into two days and it is probable that a public meeting will be arranged to take the place of the annual banquet and ball. Formal entertainment features, heretofore always an important part of the program, will be dispensed with on account of the war. The serious side of the practice of medicine will be stressed. The scientific program will be varied and every effort will be made to obtain as speakers those who have gained national prominence by reason of successful practice in their particular fields of medicine and surgery.

The individual doctor will benefit from the meeting to the extent in which he himself participates in the program. Call them refresher or postgraduate courses or scientific sessions, the fact remains that much good can result therefrom, especially in these days when doctors cannot leave home for any great length of time to take work that will keep them abreast of the medical times.

MUST MEET REQUIREMENTS

The mere suggestion that it might be well to provide for the temporary licensing of doctors who cannot meet the requirements laid down by the Public Health Council has met with a storm of protest from doctors over the entire state. This attitude is shared by the members of the Public Health Council, by the State Department of Health, and by the people generally. It cannot be too strongly emphasized that there is nothing in the situation at the present time that warrants such a step. The practice of medicine in West Virginia is on the highest possible plane, and until the need for additional medical service becomes much more acute, the high standards set by the Public Health Council will be maintained. To open the doors even upon a temporary basis to those now ineligible to practice would be to turn the medical clock back at least half a century.

MORE GAS IF NEEDED

A few instances have occurred where difficulty has been experienced by doctors in obtaining additional supplies of gasoline needed for professional purposes. Most of the cases reported concern doctors who in the first place underestimated their needs for a given period. Delays in providing relief have resulted from a misunderstanding of the regulations on the part of members of some local rationing boards, but when it was made clear by the state officers of the OPA that such boards are empowered to grant needed relief, additional coupons for "C" books were forthcoming without delay.

It is encouraging to observe that the doctors of this state are cooperating to the fullest extent in the rationing program, and lack of sufficient coupons in "C" books is the result in most cases from estimating winter needs on the basis of gas consumed during the summer and fall months. The state OPA officials have always been most sympathetic to the needs of doctors and they have moved promptly and effectively to relieve the individual doctor who has found that the supply of gasoline allotted to him falls short of meeting his requirements.

SCIENTIFIC EXHIBITS NEEDED

Although formal entertainment has been banned as part of the program for the 76th annual meeting of the West Virginia State Medical Association at Charleston in May, scientific and commercial exhibits will be set up as usual. To serve as chairman of the Committee on Scientific Exhibits, the Program

Committee has very wisely chosen Dr. Hu C. Myers of Philippi, who served so successfully in the same capacity at Huntington last year. He has selected Dr. Fred R. Whittlesey, of Morgantown, and Dr. John P. Helmick, of Fairmont, as the other two members of the committee.

The task of this important committee will not be an easy one. The committee needs the help and close cooperation of the members of the Association in planning and executing a program that must be both interesting and informative. Physicians, surgeons, and those engaged in limited practice, hospitals, clinics, laboratories, and health units are all urged to participate. Although it will be necessary, on account of limited space, to select exhibits with care, every consideration will be given proposals or plans submitted for this part of the program.

POWER OF THE PRESS

The press generally has done a noteworthy job in helping to impress the American people with the importance of conserving the energy and time of the doctor who has assumed a double burden on the civilian front. The seeds sown by the daily and weekly press, and by magazines and professional and trade journals, are beginning to bear fruit in a big way. That the public realizes the great need for cooperation with doctors at this particular time is evidenced by the fact that office consultations are being arranged with, and treatments administered to, thousands of people who heretofore have seen their family doctor only in their own homes.

Here in West Virginia, the doctors have taken off their coats, rolled up their sleeves, and hit the line with their all. In some of the coal fields, there is a need for additional doctors to replace those who have entered the military service or who for various reasons have moved to another locality, but the turnover of doctors in these areas is not much in excess of the number involved in time of peace. The matter of medical care in rural areas is another story. The need in some of these areas is still acute, but the war has nothing to do with the shortage. It is a peacetime problem. Long before the outbreak of hostilities, the essentially agricultural communities were affected by the shortage of doctors. Many who located in such communities at the beginning of their careers have moved on into industrial areas, where office practice constitutes the major portion of their work.

In cities and towns, the shortage of doctors is also being felt, but so far those who remain at home have, through the establishment of long office hours, at the sacrifice of much needed rest, and certainly at the cost of personal comfort, been able to provide adequate care for the civilian population.

CASH FOR GAS

The regulation which provides for the sale of gasoline strictly upon a cash basis is still being enforced in every state. Many doctors find that it is necessary to resort to extra bookkeeping to enable them to keep accurate records for income tax purposes of the amount paid for gasoline. No credit cards can be recognized by any dealer. Early modification or repeal of this regulation is unlikely and the answer is that records of physicians will have to be kept upon a daily rather than upon a monthly basis.

AN EXCELLENT SUGGESTION

One of the most forward-looking proposals we have so far noted relative to good neighbor policy for the postwar Western World is the suggestion offered by Admiral McIntire before the recent Congress on Medical Education and Licensure at Chicago. Briefly put, the Surgeon General of the Navy would establish in Panama a postgraduate medical school where exchange students and exchange teachers could meet for medical study and research. Why limit it to medicine? Why not include other sciences, especially government?

General News

ANNUAL MEETING SCHEDULED FOR CHARLESTON. MAY 17-18

The tentative program for the 76th annual meeting of the West Virginia State Medical Association, to be held at Charleston, May 17-18, 1943, has been arranged by the Scientific Work Committee, composed of Dr. O. B. Biern, Huntington, Chairman, and Drs. W. W. Point, Charleston, and C. O. Post, Clarksburg.

The pre-convention meeting of the Council will be held Sunday evening, May 16th, and will he followed by the first meeting of the House of Delegates. The second and final meeting of the House of Delegates will be held Monday evening, May 17. The President's annual address will follow.

The opening exercises will he held Monday morning, May 17, at 10 o'clock, and the scientific program will hegin immediately thereafter.

All sessions of the House of Delegates and meetings in connection with the convention will be held at the Daniel Boone Hotel. Sectional luncheons will be arranged for Monday and Tuesday at noon. Scientific sessions are scheduled to last ahout one hour each and it is planned to have at least ten papers presented hy out-of-state speakers prominent in their particular fields of medicine and surgery.

All formal features of the program will be dispensed with on account of war conditions, but it is probable that a night session will be held Tuesday evening, to which the puhlic will be invited.

The members of the committee are now at work on the program, and Dr. Hu C. Myers, of Philippi, has been named as Chairman of the Committee on Scientific Exhihits. Both scientific and commercial exhibits will be set up in rooms on the mezzanine floor of the Daniel Boone Hotel. All sessions will be held in the ballroom.

Motion pictures will probably be shown continuously during the noon recess and after adjournment of the afternoon sessions each day.

The reports of standing committees, usually printed in the program, will appear in the May issue of the WEST VIRGINIA MEDICAL JOURNAL, and the chairmen of all committees have been requested to submit reports early in April.

Charleston was last host to the Association at the meeting held in 1941. White Sulphur Springs was selected as the place for the 1943 meeting, but since the Greenbrier Hotel has been taken over by the government for use as a hase hospital, the meeting was moved to Charleston.

The annual meeting of the Woman's Auxiliary will he held at the same time as the meeting of the Association, and prominent speakers will appear on the program which will be presented at that time.

NO STATE INCOME TAX

Federal income tax returns, together with check covering tax dues for the first quarter, must be filed on or before March 15, notwithstanding congressional consideration of the Ruml and other pay-as-you-go plans. Washington reports that income tax returns this year are fifty per cent behind last year. Failure to file returns is no douht due to discussion of the so-called pay-as-you-go plans.

Passage by the Senate and House over the Governor's veto of the bill concerning the state income tax law means that no person in West Virginia will have to file a state income tax return for 1942. If return has already been filed and check remitted, full refund of the amount paid will be made by the state tax commissioner.

PLAIN AUTO EMBLEMS AVAILABLE

Although the surplus supply of automohile emblems bearing the imprint of the West Virginia State Medical Association has been exhausted for several weeks, requests for the emblems are still being received at the headquarters office of the Association. Manufacture of the emblems has been discontinued for the duration.

We are now informed by the officials of the American Medical Association that a limited supply of plain emblems serially numbered may he purchased at $1.50 each, plus fifteen cents federal excise tax. Orders for the emblems should be placed with the American Medical Association, 535 N. Dearborn St., Chicago, Illinois.

RED CROSS APPOINTS DR. BUSCH

The American Red Cross has announced the appointment of Dr. John F. Busch as Director of Medical and Health services for the Eastern Area, with headquarters at Alexandria, Virginia. West Virginia is included in this area.

Dr. Busch comes to the Red Cross from the Georgia State Department of Health, where he has been associated with the Division of Tuberculosis Control since 1937.

STATUS OF LEGISLATION SPONSORED BY ASSOCIATION

By the time this issue of THE JOURNAL is off the press, the fate of most of the legislation sponsored by the West Virginia State Medical Association will have been determined by the legislature.

At this writing (February 22), the Cancer Control Bill has been considered at length by both Senate and House Committees on Medicine and Sanitation. The Senate committee reported the bill out favorably late in January and it was referred to the Committee on the Judiciary for further study. Favorable action was taken by this committee on February 18, and the bill was reported out February 19 with the recommendation for passage. The bill is now on first reading in the Senate.

The bill providing for a four-year medical course for West Virginia students at the University has been reported out favorably by both Senate and House Committees on Education. The bill is on second reading in the Senate and on first reading in the House.

The Budget Bill is still in the Senate and House Committees on Finance. The item of $75,000 for each year of the biennium for the treatment and control of cancer is included in this bill, together with the item covering the establishment of a course in public health in connection with the School of Medicine at West Virginia University.

The bill sponsored by the West Virginia Tuberculosis and Health Association, embodynig the suggestions and recommendations of the West Virginia State Medical Association with reference to quarantine and commitment by county health officers of tuberculous persons and the free treatment for the needy in state sanatoriums, was reported out favorably by the House Committee on Sanitation, February 18, and referred to the Finance Committee for further study.

NUTRITION COMMITTEE APPOINTMENT

H. K. Baer, President of the West Virginia State Nutrition Committee, has announced the appointment of Dr. Ben E. Hodge, of Clarksburg, as a member of the committee, representing the West Virginia State Medical Association. Dr. Hodge succeeds Dr. J. Lewis Blanton, of Fairmont, who is now in the Army Medical Corps.

FINAL ORDER IN BUONANNO CASE

The final chapter in the case of the West Virginia State Medical Association v. the West Virginia Public Health Council and Horacio Buonanno, of Fairmont, was written in the Circuit Court of Kanawha County, February 4, with the entry of a final order by Judge Julian F. Bouchelle, forever prohibiting the Public Health Council from further considering the application of Buonanno to practice medicine and surgery in this state.

Buonanno was licensed to practice medicine in West Virginia, August 22, 1927. Prior to his admission to this examination he presented a diploma to the Council which purported to show that he had successfully completed a course of study as prescribed by law, being one of the prerequisites for examination and for the issuance of a license to practice. In 1928, the Council ascertained that the diploma submitted by Buonanno was from a "fraudulent" school. In 1930, Buonanno's license was revoked on the ground that he was guilty of dishonorable conduct—securing the license by fraud.

Buonanno again appeared before the Council in 1934 and presented a diploma purportedly issued by the University of Rio de Janeiro. The Council learned that this diploma was not genuine and refused to reinstate his license.

Since that time, Buonanno has tried repeatedly to have his license reinstated, and at the meeting of the Council held in November, 1941, he was advised that the Council would act on his application at the meeting to be held in March, 1942.

The West Virginia State Medical Association instituted a proceeding in March, 1942, for the purpose of restraining the Public Health Council from further considering Buonanno's application. In a decision handed down by the Supreme Court, December 8, 1942, the ruling of the Circuit Court of Kanawha County restraining the Public Health Council from further consideration of Buonanno's application for a license to practice medicine and surgery in West Virginia was affirmed. However, in the final order entered by Judge Bouchelle it was provided that nothing therein should be construed as prohibiting Buonanno from obtaining a license by means of another examination regularly held under the provisions of the code.

PUBLIC HEALTH COUNCIL MEETS

The regular meeting of the West Virginia Public Health Council will be held in Charleston, March 1-3, 1943.

MEDICAL COLLEGE OF VA. SYMPOSIUM

"Nutrition in War Time"
Simon Baruch Auditorium, Egyptian Building
March 25-27, 1943

Thursday, March 25, 8:00 p. m.—"Nutrition Plans of the State Department of Health", Dr. I. C. Riggin, Commissioner of Health, State of Virginia, introduced by Governor Colgate W. Darden, Jr.; "Nutrition in a Changing World", Dr. W. H. Sebrell, National Institute of Health.

Friday, March 26, 9:30 a. m.—"Making Nutrition Vital", Dr. Lydia J. Roberts, University of Chicago; "Victory Gardens as Related to War Time Nutrition in Virginia", Mr. L. B. Dietrick, Chairman, State Victory Garden Committee, Virginia Polytechnic Institute.

2:00 P. M.—"Rationing as it Affects Nutrition of the Public", Dr. V. P. Sydenstricker, University of Georgia; "Living Under Rationing", Washington OPA Representative.

7:00 p. m.—Dinner meeting—banquet—1943 ration style; "War Time Nutrition in England", Dr. V. P. Sydenstricker, University of Georgia.

Saturday, March 27, 9:30 a. m.—Panel Discussion: "Teaching Nutrition Material to Elementary School Children", Dr. Lydia J. Roberts and Miss Bertlyn Bosley. Discussion opened by: Dr. W. T. Sanger, President, Medical College of Virginia and Chairman, State Nutrition Committee; Miss Janet Cameron, V. P. I. Food and Nutrition Specialist; Miss Eleanor Enright, Regional Nutrition Representative, Office of Defense Health and Welfare Services, FSA; Dr. Sidney S. Negus, Professor of Biochemistry, Medical College of Virginia; Mrs. Luna L. Willis, Executive Secretary, Virginia Nutrition Committee; Miss Marguerite L. Pettee, Chief Nutritionist, Medical College of Virginia Clinics.

AVIATION MEDICAL EXAMINERS

Two West Virginians were among the graduates of the fifth class in aviation medicine for Aviation Medical Examiners. The practical portion of the course was given at three army air force classification centers and the didactic portion at the School of Aviation Medicine, in Texas. West Virginia graduates, as reported in the February 13 issue of the *Journal of the American Medical Association* are as follows: Lt. Keith Elmer Gerchow, Morgantown, and Lt. John Stafford Rogers, Keyser.

THE FOUNDATION PRIZE

Rules governing the annual award of "The Foundation Prize" by The American Association of Obstetricians, Gynecologists, and Abdominal Surgeons, have been announced by the Secretary, Dr. Jas. R. Bloss, 418 Eleventh St., Huntington, West Virginia.

Eligible contestants for the award of $150 include only (a) interns, residents, or graduate students in obstetrics, gynecology, or abdominal surgery, and (b) physicians (with an M. D. degree) who are actively practicing or teaching obstetrics, gynecology, or abdominal surgery.

Manuscripts must be presented under a nom-de-plume, which shall in no way indicate the author's identity, to the secretary of the association together with a sealed envelope bearing the nom-de-plume and containing a card showing the name and address of the contestant.

Manuscripts must be limited to 5,000 words, and must be typewritten in double-spacing on one side of the sheet. Ample margins should be provided. Illustrations should be limited to such as are required for a clear exposition of the thesis.

The successful thesis shall become the property of the association, but this provision shall in no way interfere with publication of the communication in the journal of the author's choice. Unsuccessful contributions will be returned promptly to their authors.

Three copies of all manuscripts and illustrations entered in a given year must be in the hands of the secretary before June first. The award will be made at the annual meeting of the association, at which time the successful contestant must appear in person to present his contribution as a part of the regular scientific program, in conformity with the rules of the association. The successful contestant must meet all expenses incident to this presentation.

STATE MEDICAL MEETINGS

The following is a list of annual meetings scheduled by state medical associations and societies for the spring of 1943:

Date	*State*	*Place*
March 30-31	Ohio	Columbus
May 3-6	New York	Buffalo
May 10-12	North Carolina	Raleigh
May 17-18	**West Virginia**	**Charleston**
May 18-20	Illinois	Chicago
May 25-26	New Jersey	Trenton

MASSACHUSETTS ACCEPTS BLUE SHIELD

In *The New England Journal of Medicine* of December 17, under Massachusetts Medical Service Section, the participation of physicians in a statewide medical service plan is described as follows:

"Three thousand and seventy-two Massachusetts doctors had become participating physicians in the Massachusetts Medical Service prior to December 8. This impressive number is evidence of a professional unity which goes far toward assuring public acceptance of the Blue Shield.

"The enthusiasm with which the public has welcomed the opportunity to protect itself through Blue Shield membership has lived up to all expectations. Many large companies have already indicated a desire to cooperate in the formation of employee groups. Steps are now being taken to enroll these groups."

In a special dispatch to the *Springfield Union*, dated November 22, Governor Saltonstall expressed gratification at enrollment in the Medical Service Plan and urged all Massachusetts citizens to join up.

"Officers of the Blue Shield have informed me that the applications for enrollment during the first week this service has been available to the public has even exceeded expectations," the Governor said. "This is good news and I trust is an indication of the greater numbers still to follow. I cannot too strongly urge all our citizens to take advantage of this program which was authorized by the Legislature with my hearty endorsement. It means less medical expense and better health for the average man, both of which factors are especially important in wartime when the strength of our home front is vital."

AMERICAN BOARD OF OPHTHALMOLOGY

The 1943 examinations of the American Board of Ophthalmology will be held in New York City, June 4-5, and in Chicago, October 8-9. Candidates will be required to appear for examination on two successive days. Application blanks may be obtained from Dr. John Green, Secretary, 6830 Waterman Avenue, St. Louis, Missouri.

DR. CROSSON RESIGNS

Dr. J. W. Crosson, who has served as Director of the Bureau of Industrial Hygiene of the State Health Department since 1940, has resigned to accept the position of Industrial Consultant for Sharpe and Dohme. He will be attached to the company's medical research staff at Philadelphia.

Obituaries

T. J. CASTO, M. D.

Dr. T. J. Casto, long a prominent physician of Charleston and one of the founders of the Mountain State Hospital in that city, died Wednesday afternoon, January 20, 1943, after a long illness.

Dr. Casto was born in Jackson county, near Ripley, May 1, 1872. He was a graduate of Baltimore Medical College, and practiced his profession at Reedy for 17 years, moving to Charleston in 1916. He was a Mason, Shriner, Odd Fellow and member of the Methodist church. He was an honorary member of the Kanawha Medical Society, the State Association and the A. M. A. Two sons, Dr. G. N. Casto and Foster H. Casto, of Charleston, and a daughter, Mrs. C. A. Drake, of Huntington, survive. His wife, the former Bertha Mae Hill, of Jackson county, died in January, 1938.

Funeral services were held January 22, at St. Mark's Methodist church, with Dr. Walter Anthony officiating, assisted by the Rev. Walter Eastwood.

LEONARD ESKEY, M. D.

Wheeling's oldest physician, Dr. Leonard Eskey, died suddenly at his home in that city, Sunday morning, January 17, 1943. He had been in failing health for several months.

Dr. Eskey was born at Sherrard, West Virginia, November 15, 1850. He attended West Virginia University for two years, and then enrolled at the University of Michigan for the study of medicine. He graduated at Mount Union College in 1888, and at the School of Medicine, New York University, in 1892.

Dr. Eskey's professional career covered nearly three quarters of a century. He taught school at Sherrard for several years and was principal at what is now Union high school at the time of the graduation of the first class. Upon his return to Wheeling, he was appointed plant physician of the old Riverside mill of the National Tube Company, at Benwood. He was physician for the Wheeling Traction Company for 25 years, and was also connected with the B. & O. R. R. Co. as medical examiner and company physician.

At the time of his death, Dr. Eskey was an honorary member of the West Virginia State Medical Association and the American Medical Association. He was a Mason and member of the

Methodist church. His wife and a son and daughter survive. Funeral services were held January 19, with Dr. William E. Craig, pastor of the Fourth Street Methodist church, officiating.

CLIFFORD C. JOHNSON, M. D.

Dr. Clifford C. Johnson, of Harpers Ferry, died suddenly of a coronary thrombosis at his home in that city January 18, 1943.

Dr. Johnson was born in Barbour County, West Virginia, November 14, 1879. After graduating from the Physio-Medical College of Indiana, in 1905, he located in his home county for the practice of his profession.

In 1912, Dr. Johnson moved to Jefferson County, where he was an active member of the Eastern Panhandle Medical Society for over thirty years, serving terms as president and secretary of that organization. He was also a member of the American Medical Association and the West Virginia State Medical Association.

JOHN H. McCOLL, M. D.

Dr. John H. McColl, prominent physician of Wheeling, was born in Kilmarnock, Scotland, May 15, 1862, son of John and Agnes Rome McColl. Most of his early life was spent in Canada, where he began his medical education. He was a graduate of several prominent medical schools and colleges.

Dr. McColl moved to Wheeling from St. Thomas, Canada, in 1900, and had practiced his profession continuously there since that date. He was a Mason and a member of the Presbyterian church. He was a member of the West Virginia State Medical Association and the American Medical Association.

Dr. McColl died suddenly at his residence in Wheeling, Wednesday evening, January 20, 1943. Surviving are three sisters and a brother. His wife, the former Adelia Pollack, died February 9, 1942.

SIR StCLAIR THOMSON

Sir StClair Thomson, the grand old man of Scotch medicine, died in Edinburg, January 29th, at the age of 83. He was a native of Ireland, having been born in Londonderry. He studied medicine at King's College and the universities of Paris, Vienna and Lansanne, receiving his medical degree from the last named institution in 1891.

Sir StClair was a pioneer in British laryngology and was throat physician to His Majesty, King Edward VII. He was a fellow of King's College and was professor emeritus of laryngology and consulting rhinolaryngologist at King's College Hospital. At one time he was consulting laryngologist at a number of other hospitals, among them the Throat and Ear Hospital, Maidstone; and King Edward Sanitarium, Midhurst; and the Seamen's Hospital, Greenwich. He was a fellow of the Royal College of Physicians of London and the Royal College of Surgeons of England and was a past president of the Royal Society of Medicine. He had been decorated by the French, Belgian and Italian governments, and was knighted by King George V in 1912.

Sir StClair attended medical conventions in the United States in 1919 and 1928. He was a prolific writer and an ardent student of Shakespeare. He was for many years European editor of *The Laryngoscope*. His best known book is "A House-Surgeon's Memories of Lord Lister." His magnificent address the Medical Society of London on the tercentenary of Shakespeare's death, "Shakespeare and Medicine", is probably the best known of his essays.

GOLD KEY AWARD TO SISTER KENNY

Elizabeth Kenny, bush nurse from Australia now working in Minneapolis, Minnesota, became the first woman in history to receive the Gold Key Award from the American Congress of Physical Therapy. The award was given in recognition of her skill in treating patients with infantile paralysis. Three Minneapolis physicians, Drs. W. H. Cole, M. E. Knapp and J. F. Pohl, who aided Sister Kenny in her treatment of a large number of patients in the acute stage of poliomyelitis, received honorable mention.—*Modern Medicine.*

ATTEND MEETINGS AT CHICAGO

The 17th annual meeting of the National Conference on Medical Service was held at Chicago, February 14, and was followed by the 39th annual Congress on Medical Education and Licensure, February 15-16. All sessions were held at the Palmer House.

The meetings were attended by Dr. E. J. Van Liere, Dean of the School of Medicine, West Virginia University; Dr. Walter E. Vest, President of the West Virginia Public Health Council; Dr. C. F. McClintic, Secretary of the Council; and Mr. Charles Lively, Executive Secretary of the West Virginia State Medical Association.

County Society News

BOONE COUNTY

Dr. E. Bennette Henson, of Charleston, presented a paper on "Joint Pains in General Practice" at the regular meeting of the Boone County Society, held at Racine, W. Va., on Sunday, January 24, 1943. The presentation was followed by a round-table discussion participated in by all those present.

A. C. LEWIS, M. D.,
Secretary.

CABELL COUNTY

The regular monthly meeting of the Cabell County Medical Society was held on Thursday, February 11, 1943, at the Hotel Prichard, Huntington, at 8:30 P. M. The program consisted of a sound motion picture in color on "Peptic Ulcer", sponsored by the Lahey Clinic, Boston, Massachusetts.

COLE D. GENGE, M. D.,
Secretary.

GREENBRIER VALLEY

At a meeting of the Greenbrier Valley Medical Society held January 15, the following officers were elected for 1943:

President, Dr. A. G. Lanham, Ronceverte; Vice-President, Dr. C. W. Lemon, Lewisburg; Secretary-Treasurer, Dr. Herbert Duncan, Lewisburg; Board of Censors, Dr. H. D. Gunning; Delegate to State Meeting, Dr. J. G. Leech, Quinwood; and Alternate Delegate, Dr. A. D. Ferrell, Lewisburg.

HERBERT DUNCAN, M. D.,
Secretary.

KANAWHA MEDICAL SOCIETY

Due to the difficulty of obtaining out-of-state speakers during the war emergency, the program committee of the Kanawha Medical Society has asked the members to present scientific papers at meetings to be held this year.

At the regular monthly meeting of the Society, held February 17, at the Daniel Boone Hotel, Charleston, Drs. W. G. J. Putschar, W. C. Stewart, A. P. Hudgins, and J. B. Banks presented a symposium on "Blood and Blood Plasma."

GEO. P. HEFFNER, M. D.,
Secretary.

MARSHALL COUNTY

At the regular meeting of the Marshall County Medical Society, held January 21, 1943, at the Nurses Home of the Glendale Hospital, the following officers were elected for 1943: President, Dr. D. B. Ealy; Vice President, Dr. R. A. Ashworth; Secretary-Treasurer, Dr. J. A. Striebich; and Censor, Dr. J. H. Luikhart.

J. A. STRIEBICH, M. D.,
Secretary.

MASON COUNTY

A regular meeting of the Mason County Medical Society was held Wednesday evening, January 27, at the Mason County Health Center. The principal speaker was Richard Elgosin, M. D., who is a member of the medical staff of the General Chemical Defense Corporation. Dr. Elgosin delivered a most interesting and instructive paper on the "Industrial Hazards of T.N.T. as Related to the General Practitioner."

MAX KOENIGSBERG, M. D.,
Secretary.

MERCER COUNTY

The Mercer Medical Society held its regular monthly meeting at the Municipal Building, Bluefield, January 21, 1943. A paper on "Plural Pregnancies" was read by Dr. A. C. Van Reenan, and Dr. Frank Huff presented a paper on "Urinary Infections."

Dr. F. V. Gammage, assistant to Dr. John McGuire, was admitted to membership in the society.

FRANK J. HOLROYD, M. D.,
Secretary.

MONONGALIA COUNTY

Dr. Russell McGinnis, Acting Chief General Surgeon of St. Luke's Hospital, Cleveland, was the guest speaker at the regular monthly meeting of the Monongalia County Medical Society, which was held at the Hotel Morgan, February 2, 1943. Dr. McGinnis' subject was "Problems in Gastric Surgery." A particularly interesting part of the program was a description of some new surgical procedures developed by Dr. McGinnis in gastroectomy.

R. R. SUMMERS, M. D.,
Secretary.

McDOWELL COUNTY

At the regular monthly meeting of the McDowell County Medical Society, held at Welch, February 10, the following officers were elected:

President, Dr. J. K. Cooper, Premier; Vice President, Dr. A. H. Bracey, Welch; Treasurer, Dr. H. T. Schiefelbein, Welch; and, Secretary, Dr. L. H. Armentrout, Welch. The following were elected as Delegates: Drs. J. H. Anderson, J. C. Hutchinson, J. K. Cooper and L. H. Armentrout. Dr. N. H. Dyer was elected First Alternate, and Dr. A. H. Bracey, Second Alternate.

PRESTON COUNTY

At the regular meeting of the Preston County Society, held January 14, 1943, the following officers were elected:

President, Dr. A. L. Starkey, Hopemont; Vice President, Dr. D. E. Sauer, Kingwood; Secretary-Treasurer, Dr. C. Y. Moser, Kingwood. Delegates, Drs. J. F. Lehman and David Salkin. Alternates, Drs. C. E. Smith and H. C. Miller. Drs. H. C. Miller, C. E. Smith, D. E. Sauer, E. E. Watson, C. Y. Moser, and W. P. Johnson, Jr., were elected members of the Legislative Committee.

A dinner meeting, with the wives of the members and the senior medical students at the School of Medicine at West Virginia University as guests, was held February 4, at Hopemont, by the Preston County Medical Society.

Following the dinner, a short business session was held at which Dr. W. Parke Johnson, Jr., presented a paper on "Intravenous Ergotrate Solution in the Latter Part of the Second Stage of Labor." Dr. H. D. Ireland presented a paper on "Minimal Pulmonary Tuberculosis."

Dr. David Salkin entertained the members of the society and their guests at his home in honor of Dr. J. F. Lehman, who will leave on February 22 for active service in the Navy.

C. Y. MOSER, M. D.,
Secretary.

BAKER REAPPOINTED MEMBER P. H. C.

Dr. Norman H. Baker, of Charleston, has been reappointed by Governor Neely as the dental member of the Public Health Council for the term ending June 30, 1945.

Woman's Auxiliary

FEBRUARY ENGAGEMENTS CANCELLED

On account of the critical illness of her husband, Mrs. Ralph Hogshead, President of the Auxiliary, was unable to fill engagements early in February with the Cabell County and Wood County Auxiliaries. Mrs. Hogshead has remained constantly at the bedside of her husband at a hospital in Charleston, and in the meantime Mrs. Ray Kessel, of that city, has been assisting with the work of the Auxiliary.

CABELL COUNTY

The Woman's Auxiliary to the Cabell County Medical Society celebrated its seventeenth anniversary with a luncheon meeting at the Hotel Frederick, Huntington, February 8, 1943. Mrs. H. A. Brandebury compiled and presented a booklet entitled, "The History of the Woman's Auxiliary to the Cabell County Medical Society." The charter members of the society who were present were: Mrs. H. A. Brandebury, Mrs. Fred Brammer, Mrs. J. W. Ferguson, Mrs. W. E. Neal, Mrs. J. W. Rife, Mrs. I. W. Taylor, Mrs. W. C. Swann, and Mrs. R. J. Wilkinson.

Past presidents who attended the luncheon were: Mrs. I. W. Taylor, Mrs. Chauncey Wright, Mrs. C. P. S. Ford, Mrs. W. C. Swann, Mrs. G. A. Ratcliff, Mrs. W. O. Grimm, and Mrs. E. J. Humphreys.

The meeting was closed with an "In Memoriam" service.

MRS. W. O. GRIMM,
Secretary.

FAYETTE COUNTY

The regular meeting of the Fayette County Auxiliary was held January 19, 1943, at Montgomery. There were nine members present. Mrs. M. W. McGehee discussed the *Auxiliary News Letter*. Mrs. George Fordham presented some facts concerning the medical service plan bill which is being considered by the Legislature. The Auxiliary decided to hold two more meetings during this year.

MRS. UPSHUR HIGGINBOTHAM,
Secretary.

THE WEST VIRGINIA MEDICAL JOURNAL

ATLAS BUILDING, CHARLESTON, W. VA.

The Committee on Publication is not responsible for the authenticity of opinion or statements made by authors or in communications submitted to this Journal for publication. The author or communicant shall be held entirely responsible.

WALTER E. VEST, M. D.
Editor
955 Fourth Ave.
Huntington, W. Va.

MR. CHARLES LIVELY
Business Manager
Atlas Building
Charleston, W. Va.

ASSOCIATE EDITORS:
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ENTERED AS SECOND-CLASS MATTER, JANUARY 1, 1926, AT THE POST OFFICE AT CHARLESTON, WEST VIRGINIA

Vol. XXXIX April, 1943 No. 4

DIABETES IN 1942 *

By FRANK N. ALLAN, M. D.‡
Boston, Massachusetts

THE public is being educated to expect a great deal of the medical profession in regard to diabetes. Through books for diabetic patients, articles in newspapers and magazines, propaganda of public health agencies and insurance companies, people are learning that early diagnosis and proper treatment can protect diabetics against disability and ill health. They are likely to be critical of a physician who fails to direct effective management of diabetics and even more critical if he fails to recognize the disease.

"Time" (August 31, 1942) presented a discussion of mortality from diabetes based on information from the U. S. Census Bureau. The death rate in 1940 was three times as great as it was forty years ago, and 68 per cent higher than in 1922 when insulin treatment was introduced with the expectation that it would give diabetics " a new lease on life." Diabetes has risen from the twenty-seventh to the tenth place in recorded causes of death. Two conclusions were drawn: (1) diabetes is becoming more common, and (2) treatment in general is not ideal. Physicians are well aware of this increase in mortality and understand, too, that many factors modify its apparent significance; nevertheless, the figures are a challenge to the medical profession.

The first step in improving the situation is to find out early those who are subject to diabetes. Of new patients coming to the medical department of the Lahey Clinic last summer, 1 in 39 had diabetes; however, the physician is not as interested in statistics as in seeing that the individual patient is given a careful diagnosis and the best treatment

THE AUTHOR

Dr. Frank N. Allan, graduate University of Toronto; interned Toronto General Hospital; Junior Member Dept. Physiology, University of Toronto, three years; Fellow in Medicine, Mayo Clinic, 1925, and member of staff until 1932; Co-Director Medical Department, Lahey Clinic since 1932; American College of Physicians; Society for Clinical Investigation; American Diabetes Association.

*Presented before the meeting of the Kanawha County Medical Society, Charleston, West Virginia, September 8, 1942.

‡From the Department of Internal Medicine, The Lahey Clinic.

available. Finally, when a diabetic dies, the attending physician, while reminded to record diabetes on the death certificate, always strives to see that it is unnecessary to give it as the primary cause of death.

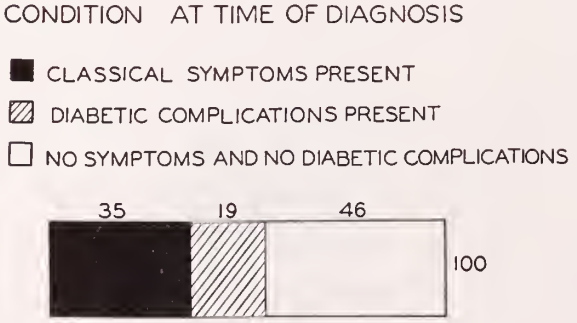
One hundred cases of diabetes recently studied at the Lahey Clinic were reviewed in order to prepare the following discussion of current problems in diabetes and our methods of diagnosis and subsequent care.

DIAGNOSIS

The diagnosis of diabetes may be reached in different ways, but the simplest way is to ask the patient. Fifty-nine per cent of our patients knew they had diabetes, or at least, that they had sugar in the urine, before they consulted us. In some cases a definite diagnosis had not been made or the glycosuria had been thought to be nondiabetic, but diabetes had at least been considered. Of course, the information supplied by patients is not entirely dependable. Most of them volunteered the information but a few withheld it purposely to see if the previous diagnosis would be confirmed.

A previous diagnosis of diabetes should never be disregarded. Without full investigation of the situation, a patient should never be told that the diagnosis must have been wrong. In other conditions one must hesitate to accept the patient's statement; for example, if he says he has kidney trouble, the diagnosis may be based on a backache attributed to the kidneys. He is then simply expressing an opinion which may be right but is more often wrong. On the other hand, if he says sugar has been found in his urine, one must accept this as a fact and not simply as an opinion.

Fig. 1



The diagnosis of diabetes is readily revealed by the classical symptoms—polyuria, polydipsia, polyphagia and loss of weight. However, in two-thirds of the cases the diagnosis is now being made before the symptoms develop. Routine examination of the urine led to the unexpected discovery of diabetes in nearly half of the 100 cases. Figure 1 shows the circumstances at the time of discovery of glycosuria. In 35 per cent of the group, the classical symptoms of diabetes were present. In 19 per cent, there were complications suggesting diabetes, such as pruritus vulvæ, lesions on the feet and changes in the eyes. In 46 per cent there were no symptoms of diabetes and none of its special complications.

COMPARISON

A comparison was made of the cases in which glycosuria was first discovered at the Lahey Clinic with those in which it was discovered prior to examination here. In the former group, the diagnosis was made before symptoms appeared in 56 per cent of cases; in the latter group, in 39 per cent. In the former the early diagnosis was made more frequently not because of better medical judgment but simply because of the routine procedure of testing the urine of every patient. One may conclude that physicians in general in this section might find nearly 50 per cent more diabetics and would find them earlier if they could have every patient submit a specimen for urinalysis, as can easily be done by a clinic or hospital.

A blood sugar test should always follow the discovery of sugar in the urine. In two-thirds of cases in which symptoms are absent, blood sugar tests are absolutely essential, either to confirm or exclude the diagnosis of diabetes. The glycosuria cannot be shown to be harmless in any other way. Absence of glycosuria when the test is repeated does not exclude mild diabetes. The amount of sugar does not determine its importance. When the amount of sugar is over 0.5 per cent, diabetes

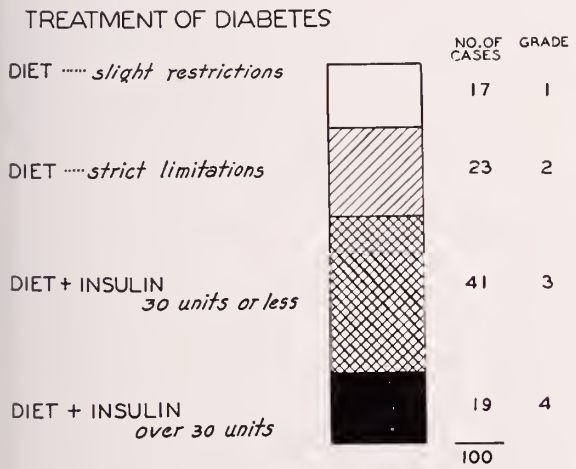
is usually responsible, and when under 0.5 per cent the glycosuria is usually nondiabetic, but only blood sugar tests can decide the proper classification of the case.

If the blood sugar is 130 or over before breakfast, 170 or over after eating, the diagnosis of diabetes is established. On the other hand, a random blood sugar test may be found normal when diabetes of mild degree is present. A sugar tolerance test should be made if the amount of sugar in the urine is over 0.5 per cent, if the patient is young or if there is a family history of diabetes. The patient must eat a full diet, unrestricted in carbohydrate, for at least two or three days before the test. Otherwise, the results may be borderline, difficult to interpret and inconclusive. If blood sugar tests or dextrose tolerance tests cannot be made, the physician should at least remind the patient to have a urinalysis periodically when well and an immediate test if he should become ill.

TREATMENT

The treatment of diabetes is often discussed as if it should be standardized for all patients, but the behavior of diabetes is variable; consequently only general rules should

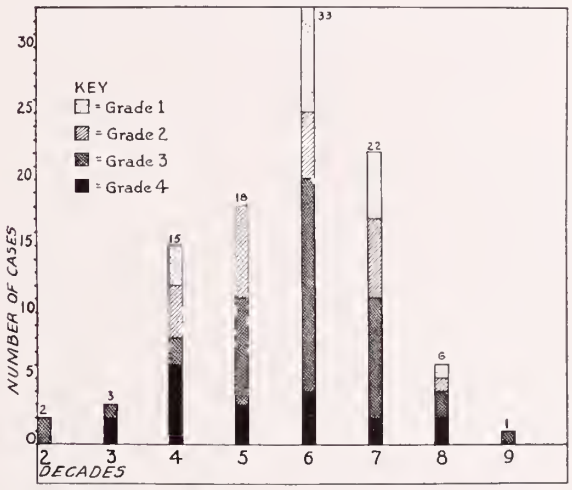
Fig. 2



be made. Several things must be considered, namely, the severity of the disease, the duration of the disorder, the age of the patient, the previous treatment, and complications, if any.

The treatment in our 100 cases is shown in Figure 2. Seventeen patients classified as having diabetes of mild degree, graded 1, were given simple dietary regulations. They were advised to eliminate foods high in sugar content, and since most of them were overweight, the total consumption of food was also restricted. Twenty-three patients with diabetes graded 2 were given more exact dietary recommendations, with detailed instructions concerning the exact quantities of each food for each meal. With such careful regulation of the diet, the diabetes was controlled satisfactorily without insulin. Sixty per cent of the patients were treated with insulin in addition to dietary regulation. Of these, 41 per cent with diabetes graded 3 managed with 30 units or less; 19 per cent with diabetes graded 4 required over 30 units a day.

Fig. 3



According to common conceptions, all the older patients would have diabetes graded 1 or 2, and only young patients, diabetes graded 4. This is far from true. Figure 3 shows the relative number of patients of different ages in the various groups. All the patients under 30 years of age were taking insulin; of the patients over 50 two-thirds were treated with insulin. Actually, the number of severe cases is greatest after middle age, since so many of the total group are over 50.

The classification is not permanent. Cases graded 4 at the start may later be graded 1. Diabetes, which seems mild in the beginning, may become severe if neglected. For example, in the group was a woman, now over 60 years of age, who had had transient glycosuria when she had an operation for hyperthyroidism performed elsewhere five years previous to examination here. She developed symptoms of severe diabetes four years later. Under ordinary conditions she required 60 units of insulin daily, and on one occasion she slipped into diabetic coma when the usual amount of insulin was withheld during roentgenologic examination of the gastro-intestinal tract. Another woman, 75 years of age, now requires 56 units of insulin daily, and the control of her diabetes has been as difficult as in any case in the group.

PROTAMINE INSULIN

Most patients treated with insulin received a single dose of protamine insulin in the morning before breakfast. The dose ranged from 10 to 35 units, the average dose being 17 units. In more severe diabetes the morning injection of protamine insulin was supplemented by an injection of regular or crystalline insulin, also given before breakfast. Rarely, a second injection of the latter was given before the evening meal. When both types of preparation were employed, the amount of protamine insulin was 10 to 60 units (average 34), and the dose of unmodified insulin, 5 to 44 units (average 21).

The ideal type of diet has been the subject of controversy. Actually, a patient will make excellent progress on any type of diet, provided he follows the recommended regimen systematically and uses insulin when needed to provide for utilization of the food prescribed. In 34 per cent of our patients a reduction diet was advised because of obesity. Usually success in control of the obesity leads to control of the diabetes. If reduction of body weight is desired, the carbohydrate must of necessity be restricted to 150 gm. or less. We usually start with a diet containing 120 gm. of carbohydrate, 70 to 80 gm. of protein and sufficient fat to provide calories adequate for maintenance of weight at the standard or slightly substandard level. Later adjustments are made with increase in the amount of carbohydrate but seldom is the total in excess of 200 gm. If more carbohydrate is used, insulin must be given in a much higher percentage of cases; some physicians prefer to follow this policy.

RESULTS OF TREATMENT

The results of treatment in this series of cases cannot yet be described fully, but on past experience one can make predictions. Restoration of health, which has been impaired by the direct effects of diabetes, can always be expected. Success in controlling glycosuria and hyperglycemia is sure to vary. From the laboratory standpoint, good results are always possible in cases of diabetes graded 1 and fair results in diabetes graded 2 and 3, but one must admit that the prospects of perfect control are poor in cases graded 4. The importance of attempting to control hyperglycemia completely has been challenged. In my opinion it is worth the effort, chiefly to prevent progression from mild into severe diabetes, and also to prevent complications which tend to occur in even mild cases when neglected.

COMPLICATIONS

The actual number of important complications in our 100 cases may seem small (Table 1), but one must recall that in a large percentage of cases the diabetes was of short duration and relatively mild. Forty-one per cent of the patients had not known of the diabetes before they came to the Clinic, and 40 per cent had diabetes which was controlled without insulin. Unfortunately, apparent mildness is not protection against any complication except acidosis.

TABLE I—Complications of Diabetes (100 Cases)

Acidosis	9
Retinitis	6
Neuritis	6
Lesions on the feet	4

In 9 cases, attacks of acidosis or coma have occurred on at least one occasion since the

onset of diabetes. Although this problem might be given extended discussion, the fundamental rule of prevention may be stated briefly—acidosis and coma will never occur if the urine is kept free from sugar.

Six patients were known to have retinitis. One of them was a 25 year old girl who for nineteen years had had diabetes, which was only partially controlled throughout the greater part of this time. Another was a middle-aged woman who had neglected treatment for five years because her diabetes seemed harmless. No doubt there were other patients who had retinal changes which were not discovered on routine examination. Six patients had neuritis, and in 2 patients it was responsible for serious suffering and disability. Four patients had lesions on the feet, 1 patient having superficial gangrene, another a perforating ulcer in a callus, and the other 2, superficial ulcers on the toes. All these conditions were either serious or potentially serious, and all developed when the patients were receiving no treatment or inadequate treatment.

The conditions of special interest associated with diabetes in the 100 cases are shown in Table II. Emphasis should be placed on the obesity, which seemed important enough to warrant inclusion in the diagnosis of 34 per cent of cases. Its prevention may prevent the development of diabetes, and the control of obesity after the development of diabetes may control the latter too.

TABLE II—Conditions Associated with Diabetes (100 Cases)

Obesity	34
Hypertension	17
Angina pectoris	4
Gall stones	4
Cirrhosis	3
Pancreatitis	1
Pregnancy	1
Hyperthyroidism	2
Adenomatous goiter (nontoxic)	3

Gallstones and associated biliary infection are thought to have an important relation to damage to the pancreas, resulting in diabetes. In this series, gallstones were demonstrated in 3 cases, and in a case of carcinoma of the gallbladder gallstones were probably present. Other patients probably had silent gallstones in view of the well known high incidence of the condition in persons past middle age.

Although the pancreas must be primarily at fault, only 1 patient showed positive evidence of a lesion of this organ. This was a case of acute pancreatitis, in which abdominal exploration disclosed extensive necrosis of the pancreas. During convalescence, evidence of mild diabetes appeared, and insulin was given with the purpose of protecting the remaining part of the pancreas from overstrain. The patient continued the insulin treatment for six months; for a year he has had simply slight restriction of carbohydrate intake. Tests of the urine and blood sugar are normal, as was a recent glucose tolerance test. The diabetes is latent but this cannot be considered an actual cure.

Pregnancy occurred in 1 case. In pregnancy with diabetes there was formerly great risk to both mother and child, but the outlook now is more favorable. With control of the diabetes, the safety of the mother is assured. The study of hormone balance and the treatment developed by Dr. Priscilla White also seems to have advanced the prospects of birth of a living, healthy child.

SPECIAL PROBLEMS IN TREATMENT

Special problems in treatment of the 100 patients deserve mention. Of greatest interest was a patient with extreme insulin resistance. The diabetes, which was discovered five years previously during hospitalization for chronic ulcerative colitis, was mild at first, but the following year became severe and extremely difficult to control. To prevent acidosis, several hundred units of insulin daily were necessary. For months he was obliged to take from 1,000 to 1,600 units of insulin. Then, after two years the insulin requirement declined, and at the present time he is managing on 68 units daily. There seems to be no limit to the amount of insulin which may be needed in such refractory cases, but if enough is given, the patient may be carried through

a critical stage lasting a few days or weeks to a few years, and finally return gradually to the state of the average diabetic.

A temporary, mild, local allergic reaction to insulin was observed in a number of cases. A severe local allergic reaction was present in the case with insulin resistance. Whether this had any relation to the insulin resistance could not be determined. In most cases in which allergy to insulin is present the effect on blood sugar is unchanged. The problem then is concerned simply with the discomfort caused by the injection. One may attempt trial of different preparations of insulin, desensitization by injection of graded doses of insulin, nonspecific desensitization with graded doses of histamine, or administration of histaminase. Each of these methods has been helpful in certain cases, but none of them has proved entirely satisfactory. Fortunately, spontaneous desensitization will usually occur gradually as the usual treatment is continued.

Insulin lipodystrophy occurred in 1 case; deep depressions appeared in the limbs at the site of injection as a result of disappearance of local subcutaneous fat. The reason for this complication has never been discovered, and no satisfactory means of prevention has been discovered. As a rule, it seems desirable to vary the site of injection and also to use the most highly concentrated form of insulin possible, thus reducing the volume of solution injected.

CONCLUSIONS

The important observations regarding the diagnosis and treatment of 100 cases of diabetes may be summarized as follows:

In 35 per cent, the classical symptoms were present at the time of diagnosis; in 19 there were specific diabetic complications. In 46 there were none of the cardinal symptoms and none of the complications which might suggest diabetes. The diagnosis was revealed by routine examination of the urine.

Of the cases in which the diabetes was discovered here, the diagnosis was established in 56 per cent before the development of symptoms or complications. Of cases in which the diagnosis was first made elsewhere, 39 per cent were recognized in a clinically latent state. It is estimated that general adoption of routine urinalysis would lead to discovery of nearly 50 per cent more cases of diabetes in the early stages.

Early diagnosis leads to success of simpler, easier treatment. Treatment with dietary regulations alone was adequate in 40 per cent of cases when the mild diabetes discovered by routine urinalysis is included. Treatment with insulin in dosage amounting to 30 units or less was needed in 41 per cent and in dosage over 30 units in 19 per cent.

Reduction of excess body weight was an essential part of treatment in 34 per cent of cases. The controversy over diabetic diets relatively high in carbohydrate versus diets relatively high in fat is eliminated in this large group, since weight reduction cannot be secured with a diet which is high in either carbohydrate or fat. As a rule the initial diet contained 120 gm. of carbohydrate and fat as needed to supply the calories required. Additions made subsequently may raise the carbohydrate allowance, but seldom in excess of 200 gm.

Protamine insulin was advised in all cases in which dietary treatment alone failed to check glycosuria. It was supplemented by unmodified insulin in all cases of severe diabetes, and in some cases of moderate severity.

The care of diabetic patients involves more than diet and insulin. The treatment of complications and associated conditions demands equal attention. Apparent mildness of diabetes does not give any security against any diabetic complications except acidosis, and when accompanied by an acute febrile illness, even mild diabetes in the aged may change to severe diabetes and lead to coma.

Kenny Treatment for Knee Injuries

An army surgeon, in the first reported instance of the application of the Kenny treatment for infantile paralysis to any other condition, claims that it greatly reduces disabilities from knee injuries.—*National Foundation News.*

FRACTURES OF THE SHAFT OF THE FEMUR

(A Review of Treatment of Femoral Shaft Fractures)

By MAJ. ATHEY R. LUTZ, M. C.*
Parkersburg, West Virginia

THIS discussion will deal with the management of fractures of the shaft of the femur only. No consideration will be made of fractures of the femoral neck, intertrochanteric fractures, or intracondylar fractures of the distal end of the femur. This latter type of fracture will be taken up by Captain King in his discussion on fractures about the knee joint. Since this group of surgeons is interested in the management of war injuries, perhaps quite near the front, this fact will be taken into consideration in our presentation today, and we shall not dwell too long on definitive treatment.

As a general rule, in civilian practice less than 10 per cent of fractured femurs are compound, as shown by reports from the larger clinics throughout the country, but we must remember that our conditions will be different and that the percentage of compound fractures will be much higher. It will be interesting to learn just what ratio the compound fractures bear to the simple fractures after the war is over and an analysis can be made. Keeping this in mind we will spend most of our time talking about the compound fracture.

The basic principles in treating compound fractures of the femur are:

1. Treatment of hemorrhage and shock.
2. Prophylaxis and infection control.
3. Complete immobilization.

Hemorrhage and shock are frequently grave and immediate attention must be devoted to their control. When bright red blood is pouring from a wound immediate control is necessary. If sacrifice of the limb is probable the tourniquet should be applied close to the wound, but if early repair is expected it should be placed at the root of the limb or a distance from the wound. If long transportation must follow the application of the tourniquet then it should be released every hour for a few minutes, controlling the hemorrhage with digital pressure during the release. The War Department Manual TM 8-210 has been consulted for this and some of the following information, and it stresses the point that, "a notation should always be made on the record accompanying the patient that a tourniquet has been applied." When the fracture is not compound one must suspect damage to a large vessel when there is an unusual amount of swelling, discoloration, or pulsation in the region; also, when there is pallor, coldness and a sensation of numbness in the limb distal to the injury. Morphine is always indicated for the control of pain unless there is an associated head injury, and even then it might be used in selected cases (in small doses) accompanied by caffeine. The barbiturates are good substitutes and can be used frequently. Body temperature must be controlled in shock cases but controlled with judgment. Keeping the patient bathed in perspiration, with the associated loss of body fluids, can be most harmful. Blankets, hot water bottles, and electric lights are the best methods of supplying heat, and, of course,

THE AUTHOR

Major Athey R. Lutz, M. C., graduate Medical College of Virginia, 1927; Fellowship Orthopedic Surgery, Willis C. Campbell Clinic, Memphis, Tennessee; Staff, Camden-Clark Memorial Hospital, St. Joseph's Hospital, Parkersburg, and Morris Memorial Hospital, Milton; American Academy of Orthopedic Surgeons; American Board Orthopedic Surgery; now on active duty outside continental United States.

*Presented to the Third Auxiliary Surgical Group, Fort Sam Houston, Texas, November 19, 1942.

ambulances should be heated. The chief function of traction, when used as a first-aid measure, for transportation, is to prevent and relieve shock, and control pain by putting the muscles at rest. The taut fascia tends to stop hemorrhage, and the traction prevents further damage to the soft tissue by the ragged bone ends. I might add that traction plus compression bandages will stop all hemorrhage except that from the very large arteries, and that the injudicious use of tourniquets is often harmful. Fluid replacement is always necessary at the earliest possible moment. This may be in the form of whole blood, plasma, saline, or even hot drinks. One should not wait until the blood pressure falls to give fluids for this is a late sign of shock. Earlier recognition can be made by clinical evaluation alone if laboratory tests are not available. In the first place, it is safe to assume that every case of compound fracture of the femur is a potential shock victim.

PROPHYLAXIS AND INFECTION CONTROL

The prevention and treatment of wound infection should be started at the place of accident, in our case the battlefield. Of course, medical attention cannot be available where the accident occurs in all of our cases, but since our soldiers are carrying sulfanilamide, the wounds can be treated with this powder and a sterile dressing applied. The Army hinged half-ring thigh splint is also applied at this time, the details of which I shall not go into, feeling sure that the members of this group will be slightly behind the litter carriers. When these cases first come up for surgery one must always consider the length of time since the accident. Many limbs and even lives have been lost because this very important factor was ignored. One must remember that the wound is contaminated at first, not infected, and that this contamination is removable within the first few hours. Neither must one forget that treatment for shock and debridement can be carried out at the same time, and time lost before debridement is precious. If the operation can be performed within one or two hours, so much the better; however, complete control of contamination can be accomplished up to six hours. Between six and twelve hours debridement can still be undertaken but with much less hope of success. After twelve hours, debridement is contraindicated, and after this time surgery should be limited to enlargement of the wound, removal of foreign bodies and packing for drainage. In our type of surgery it must be remembered that the wounds are not closed even in the early debridement cases; however, we do not expect to get infections in these early cases.

In preparing a wound a general anesthetic should usually be used; however, since we are blessed with most capable anesthetists in our group the decision will be left to their better judgment. A large surrounding area of the skin should be shaved and cleansed with soap and water, care being taken to protect the wound with sterile gauze during this procedure. The wound itself is then similarly thoroughly cleansed. All irrigation in the wound should be gentle and brushes should never be used. Strong antiseptics are worse than useless and should never be employed. I shall not go into a discussion of debridement here, but please be assured that there are good and bad debridements. After the wound has been thoroughly cleansed and debrided, sulfanilamide should be applied locally, even if the drug had been applied previously at the initial dressing; and in war surgery, such as we are dealing with, the wound should be packed open. Vaseline gauze is used for packing.

COMPLETE IMMOBILIZATION

At this stage, the fractured femur must have additional care, the type of care depending on one's location and equipment. (It is difficult to give any definite method of treatment for we expect to work in both the zone of communication and the zone of combat). Assuming that we will be further toward the front than is practicable for definitive treatment, then the Army splint must be reapplied with skin traction, or, what is still better, a

spica plaster cast might be applied. This makes heavier transportation but gives better immobilization and the patient is more comfortable. If we find ourselves where definitive treatment can be carried out, then we should take our choice of Russell traction, balanced traction with some form of skin adhesive, or skeletal traction. Skeletal traction seems to be the choice of the War Department for treating fractured femurs at the present time, but of course in the General hospital the choice is left up to the chief of the service. Some prefer the Roger Anderson universal fracture unit with which most of you are acquainted, and at the present time Dr. H. H. Haynes of Clarksburg, West Virginia, is marketing the Haynes reduction and fixation apparatus which was used quite extensively in the American Hospital in England last year. Many very favorable comments have been expressed by those using the Haynes apparatus in this experimental work. However, it seems that our group will necessarily have to rely on skeletal traction, and in my opinion the Kirschner wire method is better than either Steinman pins or ice tongs. Heavy weight, perhaps as much as 35 pounds, should be applied immediately, and usually the fracture is over-reduced in twenty-four hours. The weight is then diminished to allow approximation of the fragments. Frequent x-ray films are necessary during the first week in order to keep a close check on the fracture and get a good alignment and approximation as soon as possible.

INDICATIONS FOR OPERATION

Since so many methods have been devised to treat fractures of the shaft of the femur by skeletal traction, open reduction is seldom necessary. Operation may be indicated, however, if tissue is interposed between the fragments, or if displacement is extreme and cannot be reduced by the closed method. Open reduction is gaining in popularity with the advent of good metals for internal fixation, and there are some surgeons who do not need such an excuse in order to treat these fractures by the open method. The approaches to the femur most frequently used are as follows: (1) the anterolateral incision or Thompson technique. The skin is incised in a line between the anterior superior spine and the lateral margin of the patella; after incising the deep fascia the rectus femoris and vastus lateralis muscles are separated along their intermuscular septum. The vastus intermedius muscle, which is then brought into view, is divided in the line of its fibers down to the femur, and (2) the one most frequently used, known as the lateral incision; this is made in a line between the greater trochanter and the lateral condyle of the femur. After incising the fasciæ, the vastus lateralis and vastus intermedius muscles are divided in the direction of their fibers and the femur exposed.

No mention has been made of fractures of the shaft of the femur in children for the simple reason that we shall treat very few of these cases, at least for the duration.

Photographs are presented showing the Army half-ring traction splint, the Collins hitch, simple bone traction without splint, skeletal traction with the Keller-Blake splint and Pearson attachment, Russell traction with the same equipment, and a demonstration of the Roger Anderson fracture unit.

SUMMARY

The basic principles of treating compound fractures of the femur are:

1. Treatment of hemorrhage and shock. Every patient with a fractured femur is a potential shock victim and must be so treated. Morphine in large doses is indicated, and fluid replacement is important.

2. Prophylaxis and infection control. Time lost before debridement is precious and operation should be carried out as soon as possible. Operation within two or three hours after the accident is fine, but contamination can be completely controlled by debridement up to six hours. Between six and twelve hours debridement can be undertaken but with much less hope of success. After twelve hours debridement is contraindicated. The sulfonamides are helpful both locally and by

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mouth. A routine for wound cleansing and preparation is given.

3. Complete immobilization is advocated, and the different methods of immobilization, traction, and fixation are outlined. Skeletal traction is the method of choice for treating fractures of the femur in the combat areas. Even under ideal conditions no single method of treating fractures of the shaft of the femur is sufficient in every case, and one must be able to employ each type of treatment according to the individual indications.

NONTUBERCULOUS PULMONARY DISEASE*

By W. V. WILKERSON, M. D., F. A. C. P.
Prenter, West Virginia

During the five year period from 1930 to 1935 my time was devoted exclusively to hospital and clinic practice. In the normal routine it was inevitable that a great many chest cases should present themselves for study. Many of these cases were referred with tuberculosis as the transfer diagnosis while so often the final diagnosis was some form of nontuberculous disease. At a later date I served for a time as the medical director of the Boone County Tuberculosis Sanitarium. My experience there was, in many respects, similar to my experience in the general hospital.

It is my thought in selecting this particular subject for our discussion that we shall review together some of the more important forms of nontuberculous disease which, in spite of diagnostic and therapeutic advances, remain genuine, and at times most troublesome problems.

For convenience we shall divide the conditions discussed into acute and chronic, admitting that we do sometimes encounter most troublesome subacute conditions.

Perhaps the least serious but certainly the most frequent acute condition is the common cold. The best available evidence appears to point to a filtrable virus as the causative factor. There is little doubt that it is an infectious condition which, under suitable circumstances, may quickly reach epidemic proportions. So far as my experience goes, no satisfactory preventive agent has yet arrived nor do we have any treatment that may be properly designated as specific. The use of cold vaccines is neither recommended nor condemned. The sulfonamide drugs do not appear to be especially beneficial in the treatment of this very common condition. Because of time limitations I shall omit further discussion of this ever present malady.

Any discussion of acute pulmonary diseases will lead early to the pneumonias. When I first started into practice our medical armamentarium against pneumonia was limited to the old and familiar nonspecific supportive treatment and to the use of rather poorly prepared sera. Observing and employing these crude sera I often asked myself whether, in case personal necessity for treatment should ever arise, I would prefer the one-in-three mortality hazard of the supportive treatment or the more favorable mortality experience of serum therapy and the possibility of the violent reactions that we sometimes encountered, in spite of every precaution. The

THE AUTHOR

Dr. W. V. Wilkerson, graduate Johns Hopkins; interned Walter Reed General Hospital; Postgraduate work, Army Medical School, Washington, D. C., Army Medical Field Service School, Carlisle, Pa., Trudeau Sanatorium, and Johns Hopkins; Medical Director Red Parrot Coal Co., Prenter, W. Va.; Fellow American College of Physicians.

*Read before the Monongalia County Medical Society at Morgantown, West Virginia, October 6, 1942.

delayed urticarial type of reaction which, while not dangerous, must have been pure unadulterated torture to the patient.

Lobar pneumonia is ordinarily a primary condition and is usually caused by the pneumococcus. The characteristic onset is abrupt, with chills, high fever and chest pains as the initial symptoms, followed by dyspnea and the characteristic respiratory grunt. Consolidation of the affected lobe or lobes is usually complete at the end of forty-eight hours.

Bronchopneumonia, in contrast to the primary nature of lobar pneumonia, is likely to be a secondary infection with either of several organisms as the chief etiologic factor. Because of this the symptoms are often complex and it is sometimes not too easy to determine just where the antecedent infection leaves off and the initial phase of the bronchopneumonia begins.

The clinical picture, the underlying pathologic changes and the physical findings are too familiar to justify us in devoting any of our limited time to them here.

The treatment of the pneumonias represents one of the greatest advances that the medical profession has achieved, certainly in recent years. The refinements in the preparation of type-specific sera and greater boldness in their use have made it possible to reduce the mortality of pneumococcus pneumonia by this therapy alone to from ten to fifteen per cent.

The introduction of the sulfonamide drugs and their application to the treatment of pneumonia is perhaps the greatest advance in the control of pneumonia in the entire history of medicine. Using the newer derivatives of this series, it has been possible to reduce the pneumococcus pneumonia mortality rate from the older thirty or thirty-five per cent to an encouraging seven to twelve per cent. Equally encouraging is the fact that sulfonamide therapy is available in the home and to patients of all economic stations in life. We all know that this was definitely not true of serum therapy.

Empyema, as a sequel to or a complication of pneumonia, is a condition that is familiar to every doctor, particularly to those who experienced the influenza epidemic of World War I with its thousands, literally thousands of cases, of postpneumonia empyema. The treatment of the advanced case usually requires surgical management. It is the less advanced or less extensive case that is often so baffling. I know of no condition where it is more difficult to determine with any degree of accuracy just what is the best initial treatment of the postpneumonia patient with what, for lack of a better term, I shall designate as "a little empyema." Open drainage is not always necessary and certainly is not always desirable. It allows the introduction of secondary infections which are sometimes most troublesome. Closed drainage can be most satisfactory or most exasperating, usually the latter. In some recent cases I have done nothing except continue the sulfonamides and employ the usual supportive treatment. Results, while not uniformly satisfactory, have been encouraging. Those not doing so well probably represent errors in judgment on my part.

Another acute condition to claim passing notice is pulmonary embolism, often with infarction. Unfortunately these cases are not so infrequent as we may sometimes believe. My two most recent cases have been quite obvious and extremely serious. In one the patient had an infected toe with some home surgery and self manipulation of the affected part. She had a shower of pulmonary emboli and a local zone of reaction which caused us considerable apprehension. The last case followed injection of hemorrhoids by a resident surgeon which was soon complicated by a pelvic phlebitis with a shower of pulmonary emboli and an extensive pneumonia. This man was critically ill, being kept alive for several days largely through the use of an oxygen tent.

Of the chronic nontuberculous pulmonary conditions I think there is little doubt that chronic bronchitis is the most frequent. The usual symptoms are cough with expectoration

and dyspnea, usually of a more or less mild type. The cough is usually more severe at night and in the earlier part of the morning although these patients usually cough some throughout the day. In addition to the cough these patients sometimes have many of the general symptoms of tuberculosis, there is sometimes hemoptysis, sometimes transient elevations of temperature, there is sometimes weight loss and general malaise. Of the greatest importance is the fact that true night sweats do not occur and the pulse is not disproportionately fast. The loss of weight, when present, is often due to nonrelated causes and very often to worry and broken rest. Most of these patients entertain the idea, whether expressed or not, that they have tuberculosis. Sometimes it is most difficult to convert them from this idea. The transient elevations of temperature are due to nonrelated causes or to acute respiratory infections which are superimposed upon the chronic condition. When hemoptysis occurs it must be due to rupture of a vessel in a paroxysm of coughing.

The positive physical findings on inspection, palpation and percussion of the lungs are usually relatively few. Auscultation shows râles of various sizes from fine to coarse. These râles may be transient but they may also persist in spite of coughing and other efforts to free the bronchial tree. Of great diagnostic importance is the fact that while the breath sounds may be exaggerated there has not been any significant change in the relative pitch, intensity or duration of the inspiratory and the expiratory breath sounds. Of course the x-ray picture is usually characteristic but I have had a good deal of fun trying to work out the differential diagnosis without resorting to the roentgen ray for aid, saving it until the last for confirmation, and sometimes, also, for refutation, of the clinical diagnosis.

Treatment of the patient with chronic bronchitis is usually most trying, but there are some factors that are often of service. Elimination of foci of infection in the throat, mouth, and especially in the sinuses sometimes is followed by almost dramatic results. A revamping of the patient's daily routine to permit more rest will often be of considerable benefit though just how the patient can do this and still make a living for himself and his family often presents practical problems that neither the patient nor the physician can solve. The same objection applies to the familiar recommendation that the patient go to a warm and dry climate. However, I have several patients under observation at this time who do poorly at low levels but who do well with only moderation elevation. Such changes in elevation can often be arranged right in the patients own community without disrupting his general program. Avoidance of dusty trades is certainly to be stressed.

Structural changes already present in the bronchi preclude any great benefit from drug therapy except for the relief of cough. When bronchial spasm which is often asthma-like in character is present I like to employ tincture of belladonna 1 cc., tincture of lobelia 1 cc., and enough elixir phenobarbital to meet the indications in the particular case under consideration. This is certainly not curative but the symptomatic relief is often prompt and effective.

One of the most frequently overlooked chronic pulmonary conditions is bronchiectasis. It is often diagnosed as a chronic bronchitis and patients with this condition find themselves sent to tuberculosis sanatoria with almost inexcusable frequency. Bronchiectasis is nearly always present in fibrosis of the lung regardless of the underlying cause of such fibrosis. Of course we all recognize that pulmonary fibrosis is a hyperplasia of the interstitial tissue which, when it contracts causes various more or less serious distortions of the bronchial tree. The etiology of bronchiectasis is not fully worked out but in a general way it may be stated that obstructive phenomena play an important part. As dilation of the bronchi takes place there is a tendency for the walls to become thinned and to form a

cavity in which the characteristic secretions accumulate. A chronic inflammation of the bronchial tubes in the affected areas is the general rule.

From the morphologic standpoint bronchiectasis may be either a diffuse dilatation or local saccular dilatations. These dilatations may be unilateral and localized or bilateral and more or less widely distributed.

The symptoms of bronchiectasis are constant enough to be suggestive, although it so often suggests tuberculosis rather than the true underlying condition. Cough is regularly present. There may be long intervals with freedom from cough. When coughing starts it is likely to begin with a sudden paroxysm which somehow to me has always suggested pertussis. The cough is almost always productive, at times the amount of sputum production being considerable in amount, semi-liquid in consistency and grayish brown in color. Upon standing this sputum tends to settle into three layers with which we are all familiar. The fetid odor, so much stressed in textbooks, has not been always present in my own series of cases. I think it is largely a matter of how long the accumulated material remains in situ before being expectorated.

The physical findings will obviously vary with the area involved and the extent of progression of the process. Tactile fremitus may be increased over areas of fibrosis or over cavity formation. The findings on percussion vary according to the degree of fibrosis present. When cavity formation is near the surface there may be the tympanitic note heard over such areas. On auscultation one may hear almost any conceivable type of râles except perhaps the so-called "dry" râles.

Injection of iodized oil into the bronchial tree followed by x-ray studies will usually clinch the diagnosis. The oil may be injected through the bronchoscope or by the simple expedient of allowing it to settle into the cavities by gravity.

This field of therapy is one that is developing. Because my personal series is not large enough to allow statistical analysis with dependable results I wish it to be borne constantly in mind that any figures that I may quote are based upon larger series reported from reliable sources.

Drainage of the cavities has been tried with varying results. Postural drainage is an old form of treatment and may be of very real service. I wish to call to your attention the fact that postural drainage is not always achieved most successfully by the classical posture but in most cases each patient can work out for himself a position that will give the optimum results for that particular patient.

Bronchoscopic drainage has been a helpful procedure which may be carried out at regular intervals without too much discomfort to the patient. It is advisable to deposit lipiodol in the cavities at the end of each drainage. The general trend of thought is that the lipiodol is of therapeutic as well as diagnostic value.

Pneumothorax has been tried and generally has failed, at least in part because of incomplete compression of the cavity or cavities, the partial compression however being enough to interfere with natural or postural drainage and causing increased toxicity through retention of toxic materials in the lungs.

Phrenic paralysis has been employed but has generally been a failure. This, like pneumothorax, rests upon the fact that the rise in the diaphragm is not enough to secure complete closure of the cavities. Sometimes the altered position of the bronchial tree has resulted in partial blockage of the bronchi and the ensuing undesirable manifestations.

Drug therapy has not achieved much claim to beneficial results except that some of the creosote preparations perhaps assist in liquifying the secretions and thus facilitating their expectoration. Calcium creosote may be of some service in reducing the fetid odor.

The surgeon has been more successful in the treatment of those cases of bronchiectasis that survive the procedures they employ. Thoracoplasty is more successful than pneu-

mothorax or phrenic paralysis, especially in well defined unilateral cases. When successful the results are fairly good and the patient is able to carry on in a fairly normal manner but in those cases where only partial collapse of the cavities is obtained the same objections hold that are applicable to pneumothorax or phrenic paralysis.

The most promising therapy, in selected cases, appears to be lobectomy, with removal of the diseased area. Patients over forty do not tolerate this procedure very well. The general mortality rate is fifteen to twenty per cent. In view of this mortality hazard the physician must obviously exercise great care in studying each particular case before recommending radical surgery.

Sooner or later all of us are likely to encounter the patient with emphysema. The etiological factor in the various cases is not always clear, in fact is most likely to be anything except clear, and we cannot avoid the conclusion that heredity may play some rôle in the genesis of this condition. Regardless of etiologic considerations the fundamental picture is due to loss of elasticity of the pulmonary alveoli. This diminished elasticity is usually associated with some type of pulmonary fibrosis. As a consequence of these changes the alveoli become filled with air which they are incapable of expelling, that is to say the alveoli are more or less blown up and lack the capacity to become fully deflated. As a result of these factors the signs and symptoms of subventilation are present in varying degree. Some of these patients show more or less persistent cyanosis.

X-ray examination of the patient with emphysema will clearly show the increased aeration. Films taken at the end of inspiration and at the end of a full expiration will show much less variation in the amount of air present than is true of the normal lung. If there is any doubt of the clinical diagnosis this x-ray contrast, or rather lack of contrast, will often be helpful.

Treatment is far from satisfactory. Fairly tight abdominal supports have been used and some favorable comments have appeared but my own personal experience forces me to discount this form of support, except perhaps for its psychological value. As signs and symptoms of myocardial overload become manifest it becomes necessary to consider the circulatory mechanism in any treatment being considered.

One of the simplest and most gratifying forms of palliative treatment is self-administered oxygen, particularly before bedtime. By this means the subventilation is temporarily corrected and the patient will often sleep for relatively long periods without marked discomfort. As dyspnea returns a few minutes of oxygen will often relieve the distress and allow the patient to go to sleep again.

The drugs that are ordinarily employed are of doubtful benefit except that the expectorants and the iodides, and any drugs that relieve the bronchiolar spasm often associated with the altered alveoli, may serve a useful purpose as purely palliative measures.

Another chronic pulmonary condition that may be either primary or secondary in neoplastic disease of the lungs, usually bronchiogenic in primary pulmonary origin. The signs and symptoms may simulate tuberculosis rather closely. Acute pulmonary phenomena may obscure the basic condition for a time. In my most recent case a middle-aged man developed fatigue and dyspnea on even moderate exertion. He had a cough which had been present for "a long time." There had been considerable weight loss over a period of about three months. I first saw him after a sudden chill and sudden high elevation of temperature. The physical findings were those of pneumonia. The fever subsided in a few days but after the pneumonic consolidation had cleared up there was an area of dullness in the right base which could be best demonstrated on heavy percussion. On light percussion resonance was fairly good. As soon as his general condition would permit I had him brought to the office for fluoroscopic and roentgenologic study. There

was a definite area of increased density near the mediastinum, but still definitely in the lung field. The diagnosis of pulmonary malignancy was made and the patient sent to a thoroughly trained radiologist for study. The diagnosis was confirmed. In this case diagnosis was rather late and nothing could be done for this man but had earlier diagnosis been made there is the possibility that advanced pulmonary surgery, despite the high mortality attending such procedures, could have afforded him a much improved prognosis. The patient with bronchiectasis may well balance the discomforts of his condition against the mortality hazard of surgery and perhaps we could not be too critical if he elects to accept the discomfort; but the picture with pulmonary malignancy is so vastly different that few patients will elect to accept the mortality hazard of the disease rather than take the chance that he might be one of the lucky ones to survive the risks of surgery and get a cure.

Another interesting nontuberculous pulmonary condition is lung abscess. The causative agent is usually the staphylococcus and the hemolytic streptococcus. The mechanics of lodging these organisms in the lungs are too varied and too familiar to this group to justify further consideration of them at this time. In my personal series I have encountered abscesses ranging from minute, with the diagnosis doubtful, to immense. One woman who was admitted to the hospital about three weeks after a spontaneous delivery showed, at autopsy, one cavity about the size of a grapefruit, another almost as large and a third as large as a small orange with several smaller abscesses. One of the most interesting cases in my series was a young boy who had a tooth loosened in the course of a tonsillectomy and aspirated the tooth, unknown to the operating surgeon. His early postoperative course was uneventful, but after a brief time he began to run a mild elevation of temperature with apathy and general malaise. His local physician thought this a sequel to the tonsillectomy and for a time only routine care was given but as there was not the anticipated response he was referred to the hospital for study, being admitted on my service. X-ray examination showed the wandering tooth in the base of one lung, surrounded by an area of increased density. Bronchoscopic removal was considered the most desirable procedure and he was referred to a bronchoscopist. Everything was prepared for the procedure and as he was going under the anesthetic he developed a paroxysm of coughing and obligingly coughed up the tooth. This child's x-ray films showed an annular shadow which we regarded as a small abscess cavity. This gradually closed and he made a satisfactory recovery.

The picture presented on x-ray study may vary from hour to hour. Sometimes an annular shadow of fairly uniform increased density will appear to be followed by a second film showing an annular shadow of increased density with the central part of that shadow showing decreased density. Obviously, drainage of the abscess cavity has occurred in the interval between the films. Sometimes we may obtain useful information by deliberately overexposing a film which serves to emphasize the increased aeration of the cavity.

Treatment is symptomatic, with the sulfonamide drugs pointing to a much brighter prognosis for present and future cases than we have been able to afford our past patients. Postural drainage and bronchoscopy serve a useful purpose. Artificial pneumothorax has its admirers for treatment of lung abscesses. In selected cases it has much to recommend it. Radical pulmonary surgery enters into the therapy of lung abscess and in selected cases is the treatment of choice.

Anthracosis is a familiar picture in the coal fields, and is recognized by physicians generally. In coal miners with the picture of so-called "miner's asthma", may I suggest that the possibility of silicosis be investigated. Around most mines there are usually a few men, especially the crews of cutting machines, who have a silica dust hazard.

The classical picture of silicosis is familiar

to all. In recent years evidence has accumulated to indicate that, in addition to the classical form, we may have silicosis in a relatively acute form. Sand blasters appear to suffer most frequently but operators of drills where for one reason or another proper use of the wet-drilling technique is not enforced may also develop silicosis of the acute and subacute types.

The construction of the tunnel at Gauley Bridge has afforded West Virginia its most extensive and most widely advertised example of rapidly developing silicosis following exposure to the dust of air-operated drills. I had occasion to see quite a number of the victims of the pulmonary malady developed there and I feel fairly certain, in my own mind, that the earliest and most extensive of these cases was tuberculosilicosis and not true acute silicosis, but I think it is equally true that many cases of acute silicosis, without tuberculosis, did develop. I did autopsies on some of these people and it is hard to conceive of the extent of fibrosis present. In some the lung tissue had a definitely "gritty" feeling and chemical studies showed almost unreasonable amounts of pure silica in the residual ash. In the years that have followed I have had the opportunity to study a few of the workers there who escaped the acute malady but who show chronic pulmonary fibrosis. As time passes some of these will quite possibly progress to nodular silicosis, though of course this is in the realm of pure speculation.

I think it is fairly obvious that time will not permit a discussion of all the nontuberculous pulmonary diseases nor has it permitted a really full and satisfactory discussion of any of those we have selected for comment. As already stated, and I wish to emphasize it here, it has not been my thought that I have anything startlingly new to present. Rather it has been my thought that we review together the topics chosen for consideration, possibly to our mutual benefit.

In conclusion, I want to emphasize the frequency with which we see nontubercular pulmonary disease and that all râles we hear are not necessarily tuberculosis.

Effects of Temporary Licenses

Granting of temporary licenses would throw the doors wide open for the refugees that have flocked into the eastern states, and for the graduates of substandard schools, to come to Michigan and get established while our confreres are in the armed forces fighting for the defense of these refugees and for us.

Years have been needed to build up the standards of American medicine and no one, doctor or patient, would wish to return to what we have laboriously outgrown. The lowering of standards by admissions of graduates of schools not up to American standards would be a long step backwards. Temporary licenses will be opening wedges for permanent ones. After these men have become established they will never be turned out. The American people are too tolerant to again "disrupt the lives of those most unfortunate ones who have been run out of their homes and who were so kind and considerate as to come to our midst in our time of need (too few doctors left in practice), and who now that the war emergency is over should not again be driven out." Presto! The American standard has been diluted. Our surveys in Michigan show no great needs exist. There are some localities where the doctors are rather thinly spread but approximately 20 to 30 doctors would fill our present needs. These could be transferred from Detroit if an appeal would be made to doctors there not too well satisfied with their present opportunities.

This measure will undoubtedly be introduced into the legislature that will be in session when this is published. In defense of our brothers in the service, and to protect the public from the avalanche of doctors less well prepared, and even without the grace of citizenship, we should oppose this move.

Thirty years or more ago provision was made in our basic law providing for qualified doctors licensed in other states to secure licenses here by reciprocity. If these men whom it is contemplated will come here because of this law are properly qualified they can come here now without this law. If they are not properly qualified the state does not want them.—*The Journal of the Michigan State Medical Society.*

ALLERGY*

By L. EVERT SHREWSBURY, M. D.
Beckley, West Virginia

THE term "allergy", according to Dorland, is a condition of unusual susceptibility to a substance which is harmless in similar amounts for the majority of members of the same species. Allergists define it as: Altered energy or altered reactivity.

The conditions coming under the head of allergy are: asthma, hay fever, migraine, urticaria, angioneurotic edema, certain forms of dermatitis, eczema, acne and certain gastro-intestinal disturbances. Ten per cent of all individuals have major allergy in some form and it is estimated that 50 per cent have minor allergy.

Heredity plays a large part in allergy. Cook states that, if both father and mother have some type of allergy, three out of five children will have it in some form, and it is more likely to appear in early life, in the first five years. If one parent is affected, only one or two children will have the condition, and the symptoms in this case are more likely to appear later in life, from ten to fifteen years of age. A negative hereditary tendency is apparent in hay fever more often than in any other form of allergy.

Eczema occurs early in life as a rule, and hay fever later in life. However, heredity is of an academic nature only and, from a practical standpoint, one does not depend upon heredity for a diagnosis or for the manner of treatment which is to be given.

ASTHMA

Asthma is divided into two forms, extrinsic and intrinsic. Extrinsic asthma comprises about 65 per cent of the asthmatics, and is due, of course, to contact with some specific allergen through the skin, the respiratory or digestive tracts from some sources outside the body. Intrinsic comprises about 35 per cent of the cases and is supposed to be due to some infection within the body and is sometimes called infectious asthma.

Extrinsic asthma is present in younger people, as a rule. In a series of 2,000 cases studied by Rackeman of Boston not one died of asthma.

Intrinsic asthma begins, as a rule, in later life. It is estimated that 75 per cent of cases begin after the age of 40, and about 8 per cent die of this condition. Also, about two men to one woman have intrinsic asthma. Extrinsic asthma often becomes intrinsic later on in life.

There are three essential causative factors for these conditions: (1) inhalants, (2) foods and (3) contact with allergens.

INHALANTS

Inhalants are the greatest offenders and I will name only those that give trouble in our locality—southern West Virginia. Ragweed is the major offender, and there are two kinds, short and giant. Their pollen is in the air from about August 15 until late frost. Ragweed pollen has been found at an altitude of from six to eight miles and as far out at sea as a hundred miles, so we may have a local frost here and still have trouble from ragweed pollen from adjoining states. Grass is a bad offender. However, the only two that give any trouble in southern West Virginia are timothy, from June 25 to Octo-

THE AUTHOR

Dr. L. Evert Shrewsbury, graduate University of Louisville; interned City Hospital, Louisville; Postgraduate work, Dermatology and Urology, University of Tulane, Allergy with Dr. Frank C. Metzger, Tampa, Florida; President Raleigh County Medical Society 1936.

*Presented before the Logan County Medical Society, May 13, 1942.

ber 1, and June, or bluegrass, from June 1 to July 15. The pollen from grass does not travel as far as ragweed pollen, but it does cause much asthma and hay fever during late spring and summer. In the southern states where all vegetation is earlier, asthma and hay fever due to pollens appear much earlier. The dates which I have given, and will give you, apply to this section of our own state.

Only two kinds of trees are worthy of consideration: all the oaks, from April 25 to May 10, and the elm, from March 2 to March 20. Their pollen does not travel far, but many people are sensitive to it, especially the elm. It is air borne pollen, the same as ragweed and grass. The pollen of all inhalants in the air, in this locality, is profuse during its season.

The length of time in which a sensitive person reacts to a certain pollen depends upon his association with this pollen before developing symptoms, as well as upon the pollen itself.

SUGAR BEET ALLERGY

Dr. Phillips, of Phoenix, Arizona, made a test on a group of persons allergic to the pollen of the sugar beet. This group had never encountered this pollen before. No tests were made with beet pollen during the first year. In the second year positive skin tests were observed with no definite manifestations of clinical sensitivity to beet pollen. In the third year skin tests were strongly positive, and intense symptoms of pollinosis occurred in a considerable number of the patients under observation.

I am of the opinion that, the more powerful the pollen is in action, as well as in abundance, the shorter the time required to produce symptoms. For this locality, ragweed would claim first place, with grasses second, and trees last.

The next offender is house dust, and in the opinion of many allergists, house dust causes more trouble than any other one thing. House dust cannot be completely eliminated from the bedroom or from any other room, no matter how hard the housekeeper may try. The patient receives most of his dust from the bedroom, as he is in this room more hours during the twenty-four than in any other. This dust is in the bed, mattress, draperies, rugs, closets, behind pictures, dressers, etc., and later on, in discussing the treatment, I will attempt to explain the latest method of making the bedroom as near dust-proof as possible.

HOUSE DUST

House dust has different strengths in different localities. Dr. Frank C. Metzger of Tampa, Florida, in his paper on climatic treatment of asthma and hay fever, noticed that patients were relieved of symptoms when they visited northern states or Cuba, and that many patients from the north became worse shortly after arrival in Florida. This led to a survey by him which showed that in these cases, with but few exceptions, house dust was the predominant factor. To test whether the unknown offending allergen of house dust was present in greater amount in the dust of Florida than elsewhere, specimens of an extract of house dust from homes in Florida were sent to three leading allergists of the north: Drs. Cohen, of Cleveland, Nelson, of Evanston, Illinois, and Huber, of Chicago. After these physicians had made comparative tests and given clinical treatments with this extract to patients who were sensitive to dust, they reported that the extract of house dust from Florida was undoubtedly more concentrated than that taken from their local sources by the same method. This led me to secure house dust extracts from Florida with which to test and treat allergic patients, rather than use extracts made from dust secured locally.

Next of importance is orris root, found in cosmetic and talcum powders. This substance should cause less trouble in the future as most manufacturers of these articles have stopped using this ingredient in their products. The next offender is feathers. It is surprising how many people sleep on feather beds, winter and summer; you who practice in the coal fields know that many foreign people sleep

not only on, but under, feather mattresses as well. I had a patient recently who had had asthma for thirty-five years; she was two plus to feathers, and had slept on a feather bed and two feather pillows for this entire period. She also kept a bird in her bedroom at night and attended chickens by day. She was also sensitive to several foods. I had her remove all feathers, and the bird from her house, cease feeding the chickens and stop eating all foods to which she was sensitive and she has not had an attack of asthma since.

Animal inhalants are next in order, and the animals causing trouble most often are the cat, dog, horse and cow. Animals, as a rule, do not cause allergic conditions unless the patient is enclosed in a house or building with the animal for a short time.

CONTACT WITH ALLERGENS

There are many things that may cause symptoms in allergic people by their coming in contact with, or touching or handling them. A few of the more common are: wool, silk, cotton, kapok and various chemicals.

Other conditions that may bring an attack in allergic people are: worry, sudden change of temperature, or a run-down physical condition.

What actually takes place in the bronchial tubes upon the occasion of a severe attack of asthma, and why does adrenalin give relief? Some men hold to the theory that there occurs "a spasm or sudden contraction of the bronchial musculature", while others believe there is a "swelling of the mucous membrane, with increased secretion in the bronchi." Even today observers disagree concerning the relative importance of these factors. Probably the majority feel that both play a part, but some attach much greater significance to bronchial secretion than to bronchospasm.

Dr. Vaughan of Richmond, quoting Steinberg, states that "from studies of autopsies and experimental evidence, the asthmatic attack is not due primarily to bronchial constriction, but to plugging of the bronchi with mucus." The mucus results from hypersecretory activity of the bronchial glands. The degree and duration of the attack depend upon the quantity of the secretion, the extent of bronchial plugging and its location.

Cooke doubts the importance of bronchial spasm. He feels that the most important factors in the production of asthmatic wheezing are edema of the bronchial walls and bronchial plugging with tough viscid exudate. He attributes the beneficial effect of adrenalin to its action in lessening edema rather than to any effect on smooth muscle and draws an analogy to the action of adrenalin in the edema of the nasal mucosa and on the exudative process of allergy of the skin.

TREATMENT

Emergency.—When you are called to see an adult patient suffering with a severe attack of asthma, give .3 cc. of adrenalin chloride, 1-1000 solution hypodermically, and wait four or five minutes; if the patient is not relieved give .3 cc. again. This dose can be repeated three or four times every five minutes if necessary. It is very seldom that the third dose will be necessary. Most men think better results are obtained by giving small doses often, rather than one large dose. I have seen, and I am sure you have too, patients who are very nervous and in shock by having been given 1 cc. of adrenalin at one dose. Adrenalin is the drug of choice for any of the other allergic conditions.

General Treatment After the Emergency.—Have the patient change his environment. Either send him to a hospital, or to a relative's home, or if he cannot do either of these, have him change to a different room in his own home. This often gives relief. Give a good laxative in any allergic condition. As soon as the patient is relocated give aminophyllin, 5 cc. (1⅞ grains), intravenously, and then 10 cc. (3¾ grains), intravenously, every other day for from eight to ten doses. Give this very slowly. This drug reduces blood pressure, so always give adrenalin, .25 cc. or .3 cc., two or three minutes before giving aminophyllin. If, for any reason, you cannot give aminophyllin intravenously, get

the 2 cc. size (7½ grains) and give it in the gluteal muscle. This causes much pain if the patient moves around much after the injection, but very little if he remains quiet for 30 minutes following the treatment.

It is very good to alternate aminophyllin with sodium iodide, 15½ grains, in vein, every other day until eight or ten doses have been given. Some men give hydrochloric acid (1-1500), 10 cc., intravenously. Do not give morphine in any case of asthma.

Remove everything from the patient's bedroom you can: feathers, wool, carpets, draperies, pictures, books, all furniture not needed, birds, bird cages, cats, dogs, etc. Keep the patient away from open grates, if coal is used for heating purposes, and natural gas heaters; also away from paint and varnish. In addition, slacked lime and auto exhaust fumes should be kept away from asthmatics.

If the patient is sensitive to feathers, prescribe a kapok pillow, and if he is positive to house dust, have him get bags with zippers, especially made to fit mattresses and pillows. This one performance eliminates more dust in the bedroom than any other thing.

Tedral, made by the Maltine Co., and a capsule containing ephedrine, ⅜ gr., and phenobarbital sodium ¾ gr., made by Massingill and Co., are very good for temporary use.

HAY FEVER

An old allergist once said: "Hay fever is nothing to be sneezed at." Of patients with hay fever 40 per cent later become asthmatics. Give adrenalin as in asthma, and for itching of eyes use equal parts of adrenalin and distilled water, and drop 2 or 3 drops in each eye every two or three hours. Potassium chloride has been tried in many cases, but with very little results. Dr. Metzger, of Tampa, got fair results when he gave it during ragweed season only. The patient should not miss a single dose and it should not be given in tablet or capsule form, but well diluted in water. There is an increase in eosinophils in the nasal secretion in hay fever. For the profuse nasal discharge and congestion some men use 2 per cent ephedrine in 5 per cent dextrose in distilled water in sufficient quantity, and follow this with a nose pack of 15 per cent argyrol.

URTICARIA

Adrenalin is the drug of choice for treatment. Give magnesium sulphate in large doses, for three or four days to dehydrate the patient completely, and withhold all food except fruit juices. Give a little calcium to bring up the alkalinity of the body. Some physicians use autohemotherapy as treatment. For itching in urticaria, apply milk of magnesia to the body.

In order to achieve permanent results, it is best to make the tests in order to find out the cause. I test with extracts numbering about 250, made by Dr. Metzger of Tampa. They are stronger than the ordinary extracts used. Make scratch test with the concentrated extract placed in small abrasion on forearm, and if these are negative, use same extracts diluted intradermally on upper arms, legs or back. Sixteen tests are put on at one sitting, wait 13 to 14 minutes and read. A chart is kept recording everything to which the patient is sensitive. The patient waits 15 minutes and sixteen more tests are made and so on until the complete list of foods and inhalants are given and read which takes about one and one-half days or 6 hours. Do not test with buckwheat, since two or three deaths have occurred in doctors' offices from this extract.

Give the patient a list of the foods to which he is sensitive with instructions not to eat them, and the inhalants such as house dust, ragweed, grass, orris root, trees, etc., give the extract hypodermically twice a week. If patient can not come to office for treatment, the material can be sent to him to be given by his family physician.

Make patch tests by taking a small piece of the article suspected, for example: hat band in dermatitis of forehead. Cut it in small pieces, put these in a small piece of cellophane (which you get your sample drugs in), moisten with little water and put on back,

held in place by adhesive strips. Put on a control for comparison, and read at end of 48 hours. If the patient is sensitive or positive, the skin will be red where the article came in contact with the skin. Many women are allergic to soap and washing powders and as a result have dermatitis of the hands. Make patch tests in these cases, using not more than four tests at a sitting. Tests can be made by what is known as passive transfer and are very satisfactory if properly carried out.

CASE REPORTS

Case 1: (D. R.) female, age 3, tested April 7, 1941, had asthma all year round and all her life. Has a first cousin on father's side with asthma. I will name all the things to which she is positive: Carrots, 1 plus; parsnips, 1 plus; lettuce, 1 plus; cauliflower, 1 plus; rhubarb, 1 plus; string beans, 1 plus; cucumber, 1 plus; squash, 1 plus; tomatoes, 1 plus; kidney bean, 2 plus; blackeyed pea, 2 plus; peach, 1 plus; plum, 1 plus; prunes, 1 plus; lemons, 2 plus; banana, 1 plus; pear, 2 plus; fig, 2 plus; rutabaga, 1 plus; cloves, 1 plus; rye, 1 plus; barley, 1 plus; lima beans, 1 plus; navy beans, 1 plus; mushroom, 1 plus; white potato, 1 plus; collards, 1 plus; apricots, 2 plus; rice, 1 plus; pork, 1 plus; lamb, 1 plus; veal, 1 plus; rabbit, 1 plus; mullet, 1 plus; red snapper, 1 plus; sea trout, 1 plus; salmon, 1 plus; clam, 1 plus; lobster, 1 plus; scallop, 1 plus; shrimp, 2 plus; peppermint, 2 plus; nutmeg, 1 plus; black pepper, 1 plus; ginger, 1 plus; paprika, 1 plus; cocoa, 1 plus; tea, 1 plus; eggs, 1 plus; goat milk, 2 plus; hops, 1 plus; soy bean, 1 plus; cranberry, cotton, 1 plus; house dust, 1 plus; dog, 1 plus; wool, 1 plus; silk, 1 plus; pyrethrum and ragweed, 1 plus each. I took her off the foods to which she is sensitive and gave her dust extract injections once a week and ragweed extract beginning two months before ragweed season, and continuing until frost, and she has been free of asthma since her first treatment.

Case 2: H. M., male, 23, testel August 21, 1941; had had asthma 8 years, worse in fall; in hospital two to three months during each fall. Father had asthma. The patient is positive to the following foods: Carrot, 1 plus; parsnip, 1 plus; turnip, 1 plus; spinach, 1 plus; onions, 2 plus; broccoli, 1 plus; cauliflower, 2 plus; kidney bean, 1 plus; peas, 2 plus; white potatoes, 1 plus; sweet potatoes, 1 plus; collards, 1 plus; peach, 1 plus; plum, 1 plus; lemon, 1 plus; watermelon, 1 plus; apple, 1 plus; pineapple, 1 plus; fig, 1 plus; huckleberry, 1 plus; English walnut, 2 plus; pecan, 1 plus; peanut, 1 plus; brussel sprouts, 1 plus; tapioca, 1 plus; barley, 1 plus; oats, 1 plus; rice, 1 plus; wheat, 2 plus; lamb, 1 plus; rabbit, 1 plus; salmon, 1 plus; shrimp, 1 plus; peppermint, 1 plus; nutmeg, 2 plus; mustard, 1 plus; cocoa, 1 plus; tea, 2 plus; cocoanut, 1 plus. He is positive to the following inhalants: dust, 3 plus; feathers, 1 plus; horse epidermals, 1 plus; ragweed, 1 plus, and, upon appropriate treatment has been free from asthma since testing.

Case 3: A. P., female, age 14, tested August 19, 1940. She has had hay fever for 10 years, worse in summer and fall. Sensitive to many foods, as follows: Carrot, 1 plus; turnip, 2 plus; onion, 1 plus; spinach, 2 plus; broccoli, 1 plus; asparagus, 2 plus; cauliflower, 1 plus; string bean, 3 plus; squash, 1 plus; tomato, 1 plus; kidney bean, 1 plus; mushroom, 1 plus; white potato, 1 plus; cherry, 1 plus; plum, 1 plus; lemon, 1 plus; lime, 2 plus; orange, 1 plus; watermelon, 1 plus; strawberry, 1 plus; pecan, 2 plus; peanut, 1 plus; brussels sprouts, 1 plus; kale, 1 plus; rutabaga, 1 plus; beef, 1 plus; pork, 1 plus; veal, 1 plus; clam, 1 plus; crab, 1 plus; lobster, 1 plus; ginger, 1 plus; mustard, 1 plus; paprika, 2 plus; garlic, 1 plus; tea, 2 plus; milk, 2 plus; eggs, 2 plus; soy bean, 1 plus; cocoanut, 1 plus; date, 1 plus; cranberry, 1 plus; green pepper, 2 plus; cotton, 1 plus; tobacco, 1 plus; dust, 2 plus; orris root, 2 plus; feathers, 2 plus; silk, 2 plus; flax, 1 plus; pyrethrum, 2 plus; ragweed, 6 plus; grass, 6 plus. Upon treatment she has had no trouble except when I gave her too much ragweed during ragweed season. In one hour after the injection she had a severe attack of asthma which required three doses of adrenalin, .35 cc. each, and a tourniquet around her arm above the ragweed injection to give her relief. I now give blebs during ragweed season instead of injection. They are safer and give better results.

Case 4: T. N., male, 27, had asthma for 1 year; tested November 6, 1939. Positive to foods as follows: Beet, 2 plus; carrot, 1 plus; turnip, 1 plus; cabbage, 1 plus; spinach, 1 plus; broccoli, 1 plus; cauliflower, 1 plus; mushroom, 2 plus; white potatoes, 1 plus; sweet potatoes, 1 plus; collards, 1 plus; peach, 1 plus; plum, 1 plus; cantaloupe, 1

plus; watermelon, 1 plus; grape, 2 plus; huckleberry, 1 plus; almond, 2 plus; English walnut, 2 plus; peanut, 2 plus; brussel sprouts, 2 plus; rye, 1 plus; corn, 1 plus; beef, 1 plus; veal, 1 plus; clam, 2 plus; oyster, 2 plus; cinnamon, 1 plus; mustard, 2 plus; paprika, 1 plus; vanilla, 1 plus; garlic, 1 plus; cocoa, 1 plus; coffee, 1 plus; tea, plus-minus; dust, 1 plus; orris root, 2 plus; feathers, 1 plus; silk, 3 plus; flax, 2 plus; pyrethrum, 2 plus; milk, 1 plus; goat milk, 1 plus; soy bean, 2 plus; date, 1 plus. He was 3 plus to silk by the scratch test, and if his wife came in a room where he was, with silk hose on, it would give him asthma. I took the offending foods away and removed silk and he has been free of asthma since.

Case 5: J. L. H., male, age 44, had trouble for four years. Diagnosis of asthma was made. Sensitive to foods as follows: radish, 1 plus; turnip, 1 plus; celery, 2 plus; broccoli, 2 plus, asparagus, 2 plus; cauliflower, 1 plus; string bean, 1 plus; pumpkin, 1 plus; tomato, 1 plus; kidney bean, 1 plus; black-eyed pea, 1 plus; peas, 1 plus; garbanzas, 1 plus; mushroom, 2 plus; plum, 2 plus; prune, 1 plus; cantaloupe, 1 plus; grapefruit, 1 plus; banana, 2 plus; pear, 2 plus; fig, 1 plus; blackberry, 2 plus; strawberry, 2 plus; pecan, 1 plus; peanut, 1 plus; brussel sprouts, 2 plus; rutabaga, 1 plus; wheat, 2 plus; pork, 1 plus; mullet, 1 plus; red snapper, 2 plus; sea trout, 2 plus; salmon, 1 plus; tuna fish, 1 plus; clam, 2 plus; oyster, 2 plus; lobster, 2 plus; scallop, 2 plus; nutmeg, 1 plus; garlic, 1 plus; dust, 2 plus; orris root, 1 plus; feathers, 1 plus; horse serum, 1 plus; wool, 2 plus; silk, 2 plus; flax, 1 plus; ragweed, 2 plus; mixed grass, 2 plus; milk, 1 plus; soy bean, 2 plus; date, 1 plus; cranberry, 1 plus; olive, 1 plus. Treated for three months; no better; died six months later of silicosis in the far west.

Case 6: L. S., female, age 31 from Braxton County, West Virginia. Contact dermatitis of the left hand. Positive to several foods, which are: turnip, 1 plus; celery, 1 plus; lettuce, 1 plus; spinach, 1 plus; kidney bean, 1 plus; black-eyed peas, 2 plus; mushroom, 1 plus; cherry, 1 plus; grapefruit, 1 plus; lemon, 1 plus; lime, 2 plus; orange, 1 plus; grape, 1 plus; strawberry, 1 plus; almond, 1 plus; English walnut, 1 plus; pecan, 1 plus; peanut, 1 plus; wheat, 2 plus; mullet, 1 plus; red snapper, 1 plus; salmon, 1 plus; crab, 1 plus; lobster, 1 plus; scallop, 2 plus; shrimp, 1 plus; peppermint, 1 plus; ginger, 1 plus; mustard, 1 plus; paprika, 1 plus; tea, 1 plus; dog, 1 plus; cow epidermals, 2 plus; wool, 1 plus; pyrethrum, 1 plus; ragweed, 1 plus; trichophytin, 1 plus; monilia albicans, 1 plus; date. She lived on a farm and milked with her left hand. She stopped milking and has been free of dermatitis since that time.

Case 7: F. S., a nurse from McKendree Hospital. She had contact dermatitis of face, neck, chest and hands. Sensitive to many foods which are: turnip, 1 plus; cabbage, 1 plus; asparagus, 2 plus; cauliflower, 1 plus; squash, 1 plus; mushrooms, 1 plus; cherry, 1 plus; lemon, 1 plus; lime, 1 plus; fig, 1 plus; almond, 1 plus; tapioca, 1 plus; rye, 1 plus; duck, 1 plus; mackerel, 1 plus; mullet, 1 plus; clam, 1 plus; nutmeg, 1 plus; cinnamon, 1 plus; cocoa, 1 plus; tea, 2 plus; dust, 1 plus; horse serum, 1 plus; wool, 2 plus; flax, 1 plus; mixed grass, 1 plus; trichophytin, 1 plus; monilia albicans, 1 plus; date, 1 plus; cranberry, 2 plus; arrowroot, 1 plus; 4 plus to bichloride of mercury by patch test. Took her away from positive foods, bichloride and wool and gave intramuscular injections of spleen extract. She cleared up in one month. A relapse occurred one month after clearing up, a small patch appeared on her face following a dance, to which I attributed to her face coming in contact with a wool sweater worn by the boy. She is now working in the Emergency Hospital at Welch, W. Va., and has been free of dermatitis for over a year.

Vitamins and New Orleans

Henry McLemore reports from the still civilized city of New Orleans: "Here is America's last stronghold against the vitamin. It is the one town left where the cooking is based on taste, and not on whether it is so healthful that it will make you feel able to lick your weight in wildcats. Vitamins A, B, C, D, E, F and G give New Orleans a wide berth, because word has gone out as to what happens to them there. Chefs of other cities treat the vitamin as if he were a royal prince with a weak heart. He is not boiled enough to hurt him, and they never let the poor little fellow get fried. Not so, 'way down South. The chefs give the vitamin a going-over that makes a police third degree seem like a christening. They slap him in the face with sauces. They frizzle, fry, and fricassee him. When he yelps "uncle" they shut him up with a chunk of butter, a cupful of cream and a dash of cognac. —*Cincinnati Journal of Medicine.*

Tuberculosis Abstracts

Furnished Through the Courtesy of the West Virginia Tuberculosis Association

Fire is fire, no matter what the fuel, but when gasoline is thrown on a flame a dangerous explosion results. Tuberculosis is the same disease now as in peacetime, but war invariably favors a flare-up of tuberculosis and creates new difficulties for those who must combat the blaze. The hard-pressed general practitioner is a seasoned firefighter whose aid must be enlisted and whose effort must be supported if smoldering tuberculosis, lately coming under control, is to be prevented from spreading into a serious conflagration. Even veteran firemen, however, periodically examine their equipment and drill themselves to increase their efficiency.

War Challenges the General Practitioner

Under the stress of war it has been observed that conditions favor the spread of pulmonary tuberculosis. Probably an increase in the disease has not occurred to date in this country as a whole, but a rise has occurred among other belligerent nations and in some of our own industrial centers.

Increase in prevalence and mortality can be traced to inadequate diet, insufficient institutional facilities and medical care, lowering of resistance from apprehension and disturbed rest, and overcrowding and poor housing in areas of concentrated war industry.

Since the disease appears on the increase in countries at war longer than ours, it must be assumed a similar trend is to be anticipated here. This calls for early diagnosis, hospitalization of active cases and discovery of infective contacts. Greatest hope for success lies in the interest and cooperation of the general practitioner. He sees the patient early and through his intelligent effort will come early diagnosis, prompt isolation and the investigation of contacts. Toward this goal we shall indicate a path for the practitioner, who, deprived of many a colleague, finds his problems multiplied and his strength and time in so wise reinforced.

Usually it is easy for a tuberculosis specialist to make a diagnosis once the suspect has been singled out by the practitioner. More difficult is it for the latter to give due consideration to tuberculosis—only one of many conditions that may assail his patient.

For example, cough is the most common symptom of the disease. In one with a history of previous acute pleurisy, chronic cough is very suspicious. Nevertheless, the disease may be present without it, and most agree that cough or any other symptom is a relatively later, not an encouragingly earlier manifestation of pulmonary tuberculosis. If we persist in describing tuberculosis in terms of symptoms, we might as well omit further discussion of early diagnosis, even though we admit that knowledge of classical symptoms is essential if we are to have tuberculosis in mind when we encounter those less fortunate cases long past the stage when early discovery was possible. These symptoms include fatigue, particularly in the late afternoon, loss of weight, low grade fever, chest pain and hemoptysis.

If tuberculosis is to be found preclinically or at onset of its earliest symptoms a thorough, practical and economical plan of attack is necessary. Weapons at hand include history, physical examination, tuberculin test, sputum examination, x-ray and fluoroscopy.

Tuberculosis specialists generally feel that the greatest deterrent to early diagnosis by the practitioner is the expense of x-ray examination. If it were as easy to x-ray the lungs as to do a physical examination many more early cases would be found. Where x-ray facilities are handy it is simpler to take a picture and study it than to do a physical examination, which, though thorough, may fail to disclose the trouble. Most practitioners lack office x-ray facilities, but the truth remains there is no substitute for a good x-ray picture. Today, in all but the most rural communities, arrangements can be made for x-ray of the chest in the indigent as well as in others.

Physical examination may uncover râles, breath sound charges, etc., but their absence does not mean absence of tuberculosis. In every sanatorium are patients with far advanced disease who have been told by their family doctors that no signs of tuberculosis were present. Similar oversight may occur in some early cases when symptoms are present as well as positive x-ray findings. This is no reflection upon the skill of the physician but proves that symptoms and x-ray evidence are often present before definite physical signs of tuberculosis develop.

Fluoroscopy, even in the hands of experts, is not as accurate as film methods in diagnosing tuberculosis. Serial pictures, too, give better clues as to the progress of lesions than mere observation of the clinical record.

The tuberculin test, variously conducted, is of value in the process of screening groups or studying

(Continued on page xxx)

The President's Page

The very splendid work that was done by our Legislative Committee and our efficient secretary made it possible to write into our statutes every bill that was endorsed and actively supported by the medical profession. It was indeed gratifying to know that this body of lawmakers was enthusiastic about our proposed legislation so long as it received the full endorsement of the profession, which means that "in unity there is strength."

The very controversial question of prepayment hospital and medical care was finally put on the shelf, in that the bill finally passed was simply a holding measure until the 1945 Legislature convenes. In taking this stand, the Legislature emphatically implied that it is the responsibility of the State Association to provide a sensible, workable plan before the next meeting. This action is clearly a challenge to our profession. As your presiding officer, I accept it believing that we are capable of recognizing the necessity for some such reform to meet the present day need. In fact, both the House of Delegates at our last meeting, and the Council at a recent meeting, unanimously endorsed the principle of prepayment medical service. Now the question is how can this be done? To meet this and other pertinent problems that vitally affect the medical profession and the citizens of West Virginia, I have appointed a Fact Finding and Planning Committee. I shall suggest to this committee that they study not only the question of prepayment medical care, but our state health laws as well, with the idea of providing a full-time, trained health personnel for every county or group of counties (obviously this should include school health).

The tubercular patient is a menace to the community health unless properly trained in an institution how to protect himself and others; therefore, the system of handling these patients, as well as the management of our institutions, should have thorough study.

The mental cases are a burden to the taxpayers, and I feel quite sure that after a painstaking study many worthwhile reforms can be suggested.

In selecting this all-important committee, I have chosen men who are interested in medicine and all that this implies; men who will make a sacrifice to better conditions in our profession and state; men from different parts of the state so that no section will be left unrepresented. The committee is as follows:

Dr. Ray M. Bobbitt, Huntington, chairman; Drs. D. A. MacGregor, Wheeling; Thos. L. Harris, Parkersburg; John P. Helmick, Fairmont; Frank V. Langfitt, Clarksburg; F. R. Whittlesey, Morgantown; Frank J. Holroyd, Princeton; B. H. Swint, Charleston, and Hu Myers, Philippi.

Reports will be submitted from time to time by the committee to the Council, and later the entire program will be presented to the House of Delegates for discussion and action by our members.

Constructive criticism is always helpful, but the majority should and must rule.

West Virginia Medical Journal

Official Journal of
The West Virginia State Medical Association
302 Atlas Bldg., Charleston, West Va.

Editor
Walter E. Vest, M. D. ..... Huntington

Associate Editors
Edward J. Van Liere, M. D. ..... Morgantown
W. M. Sheppe, M. D. ..... Wheeling
J. C. Hutchinson, M. D. ..... Welch
G. G. Irwin, M. D. ..... Charleston

Editor Emeritus
James R. Bloss, M. D. ..... Huntington

Business Manager
Mr. Charles Lively ..... Charleston

Published monthly on the first day of the month, at Charleston, by The West Virginia State Medical Association.

Original articles are accepted on condition that they are contributed exclusively to the Journal.

Advertising rates furnished upon request. All advertisements must conform to the standard established by the Council of Pharmacy and Chemistry of the American Medical Association.

Address all communications to Business Manager, West Virginia Medical Journal, Box 1031, Charleston, West Va. Phone, Capitol 34-625.

SUBSCRIPTION $3.50 PER YEAR

Entered as second-class matter, January 1, 1926. Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917. Authorized July 24, 1919.

A SERIOUS CHALLENGE

At the recent meeting of the National Conference on Medical Service in Chicago, Dr. A. W. Adson, of the Mayo Clinic, presented a paper on "The Doctor of Medicine and His Responsibilities", which we had hoped to publish concurrently with *Minnesota Medicine* this month. However, we were unable to secure copy in time to do so.

Dr. Adson made the point that not only is it incumbent upon the medical profession to furnish the laity adequate medical care, to keep medical education on a high plane, and to advance medical knowledge, but that it is equally a duty to guide the mass thinking of the populace aright upon everything which bears upon health and medicine. He feels that our profession has largely failed in its efforts to educate the lay public upon matters medical.

He calls attention to the value of a state of mutual trust and confidence between state officials, especially legislators, and the medical profession, and points to Minnesota in which such a desirable state of affairs exists. He might well have cited Alabama also, and the medical legislation enacted by the recent session of the West Virginia Legislature indicates that our own state is well advanced along this line.

To clinch his point that further organization and better work on lay education in matters medical is necessary, Dr. Adson cites a recent legal opinion in which all doctors are vitally interested. We quote:

"It is befitting to quote the statement found in the opinion written by Justice Miller, of the United States Court of Appeals of the District of Columbia, in the case of the United States of America v. the American Medical Association, and the case of the United States of America v. the Medical Society of the District of Columbia. The italics are mine.

"'It may be regrettable that Congress chose to take over in the Sherman Act the common law concept of trade, at least to the extent of including therein the practice of medicine. Developments which have taken place during recent decades in the building up of standards of professional education and licensure, together with self-imposed standards of discipline and professional ethics, have, in the belief of many persons, resulted in substantial differences between professional practices and the generally accepted methods of trade and business. As we pointed out in our earlier decision, the American Medical Association and other local medical associations have undoubtedly made a profound contribution to this development. *However, our task is not to legislate or declare policy in such matters, but rather to interpret and apply standards and policies which have been declared by the legislature. That Congress did use the common law test there is no doubt. That Congress was not otherwise advised was perhaps because of the failure of the professional groups to insist upon the distinction and to secure its legislative recognition.*'

"Does the medical profession of this country need a stronger invitation, or a more direct challenge to take an intelligent, helpful and fair stand in the enactment of legisla-

tion that not only concerns the public welfare but the welfare of medicine itself? Does not the medical profession of this country, as citizens and taxpayers, have a right to express its opinion in these matters before legislation is enacted and rules and regulations adopted by some bureau? I do not share the opinion that the time for the medical profession to speak up is after such things have taken place. Neither do I have the opinion that Congress would be resentful of intelligent, courageous and fair advice on such matters. What better proof can be asked than the quotation from Justice Miller's opinion that the Court is not responsible for the absence of advice from the medical profession when Congress is drafting a law?"

Accordingly, Dr. Adson, speaking for the North Central Medical Conference, urges the establishment in Washington of a medical information bureau (a lobby, if you will) with a physician who has practiced medicine as executive chairman to be aided by full-time legal counsel. The functions of this bureau would be to advise the public on matters of medical interest, to assist governmental agencies in formulating plans on medical care, and to offer constructive advice on proposed medical legislation. He suggests three ways of effecting such an organization: (1) By the American Medical Association, (2) by the National Physicians' Committee, and (3) by unification of the activities of the various state committees on public policy and legislation. We feel that his third suggestion is too unwieldly to be given serious consideration. At any rate, we predict that this subject will loom large at the June meeting of the House of Delegates of the American Medical Association.

WEST VIRGINIA MOVES AHEAD

The Legislature has been called upon during the past ten years to enact many laws needed to keep West Virginia abreast of the times. Problems developing as a result of ever-changing conditions have had to be met and solved. Laws not so much as ever before dreamed of have been placed upon the statute books. And now, with the passage of S. B. 36, our state becomes one of a dozen to enact a specific cancer law.

At all the hearings held on the bill, in conversations between doctors and members of the Legislature, and in newspapers in every section of West Virginia, the point was made that the legislation is needed if we are to maintain our place among the progressive states of the country. However, the responsibility of the doctors does not end with the passage of the bill. It is now incumbent upon the members of the profession to help make the whole cancer control campaign a success. We must prove to the Legislature that we were right in our contention that the legislation is not only desirable, but necessary.

The program for the enactment of the cancer control bill was inaugurated by the special cancer committee, composed entirely of doctors, appointed by Governor Neely to work with the Legislative Interim Committee. From the very first meeting of this committee to the date the bill was passed and sent to the Governor for his signature, the members of the Legislature have been most cooperative. The unanimous vote in the Senate and House is most gratifying to those who have worked so hard to obtain affirmative action. Each and every member of the Legislature deserves and will receive the sincere thanks of the medical profession for helping to place West Virginia high up among the states which are trying to do something about cancer.

SISTER KENNY COMING

The announcement that Sister Elizabeth Kenny is to be one of the speakers at the Seventy-sixth Annual Meeting of the West Virginia State Medical Association adds much to the attractiveness of the program that is being arranged for the occasion.

Sister Kenny has made a name for herself in her successful treatment of those afflicted

with poliomyelitis. Her technique is being taught to physicians and nurses from hundreds of cities over the country. Her name is a household word in every community in the land.

Sister Kenny's appearance at the Charleston convention is of interest to every doctor and nurse in West Virginia. Infantile paralysis is no respecter of persons or communities, and any instructions in modern treatment that might aid in combatting the sometimes horrible after effects of the disease in the form of crippling paralysis will be of interest alike to general practitioners and to those engaged in limited practice.

VACATION IN MAY

The West Virginia State Medical Association is composed of over thirteen hundred doctors, the great majority of whom undoubtedly have not planned a vacation for 1943. The shortage of doctors in almost every section, difficulties experienced in obtaining satisfactory train or bus reservations, and crowded conditions found in hotels usually frequented by vacationers combine to make a contemplated vacation trip this year somewhat of a nightmare. However, there is an answer to the vacation problem.

The annual meeting of the Association to be held at Charleston, May 17-18 offers the opportunity for a pleasant vacation that affords also a postgraduate or refresher course in the various fields of medicine and surgery. The streamlined convention will include two full days of scientific sessions. Some of the most prominent physicians and surgeons in the country have already accepted speaking engagements. What will no doubt prove to be one of the best programs in the history of the Association is being arranged by the Scientific Work Committee. In addition, interesting scientific and commercial exhibits will be set up for the two-day meeting.

To the doctor who feels that he cannot leave his practice this year long enough to take a vacation, the annual convention of the Association affords the opportunity to combine professional business with pleasure. Charleston is not many hours away by rail or bus or motor car. Attendance at the meeting for the full two days should prove to be the stimulant needed to enable doctors to continue to maintain the killing pace set as a result of duties heaped upon them by reason of World War II.

FOUR-YEAR COURSE IN MEDICINE

The results of the enrollment each year at the Medical College of Virginia of twenty West Virginia students who complete the premedical course at West Virginia University will be watched with more than passing interest by officials of medical schools in every part of the country. The agreement approved by the Board of Governors of the University and the Board of Visitors of the Medical College of Virginia provides for the coordination of courses at the two schools so that third year students from the one school will have had the same preclinical training as the students at the other.

The agreement provides that twenty students completing the two-year course at the School of Medicine at the University are to be selected for enrollment at the Virginia school at the beginning of their third year. Thus, after the first year, forty West Virginia students will be enrolled for the third and fourth years of the course at the Virginia school. Upon graduation, diplomas are to be signed by officials of both schools. This will mark the first time in the history of medical education that such an arrangement has been entered into between schools located in separate states.

The experiment is not something that has been thought up over night. The plan has been developed over a period of several months and appears to be workable. Above everything else it seems to be the answer to the popular clamor for a medical school in West Virginia. The building and mainte-

nance of such an institution at this time is out of the question, and certainly there is every reason to believe that the arrangement between the two schools will prove to be successful.

The establishment of the four-year course in medicine at the University is made possible under the provisions of a bill passed at the recent session of the Legislature without a dissenting vote. The members acted wisely, and they are to be commended for taking a step that means so much to our own boys who have decided to make the practice of medicine their life work.

A TOUGH ASSIGNMENT

One of the most important committees to be appointed within the medical profession in late years is the fact-finding and planning committee appointed by Dr. R. J. Wilkinson, President of the West Virginia State Medical Association.

One of the principal, though highly controversial, subjects to be taken up for consideration by the members of this committee is that of medical-hospital service plans. It will be recalled that there was a wide difference of opinion among the members of the Council with reference to the approval of the bill drafted by and introduced in the Legislature at the instance of the state insurance commissioner. The Council approved the bill by such a slight majority that the state legislative committee withdrew all support for the measure during the recent session of the Legislature. This is a tough assignment for the committee, but with two years in which to delve deeply into the intricate workings of such a plan, there is no doubt that some satisfactory workable plan can be evolved before the present law expires.

Several other matters of importance to the members of the profession will be considered by this special committee, including treatment and control of tuberculosis, and management of state institutions for the treatment of tuberculosis and mental diseases.

SELECTEE SCREENING

We are just in receipt of "Medical Circular No. 3" from General Lewis B. Hershey, Director of the Selective Service System, too late to publish in whole or in part in this issue. The aim of this circular is, however, to call attention to the absolute necessity for careful screening of all selectees by the examining physicians and dentists for the local boards in order to classify locally as IV-F all individuals obviously physically unfit for military service. By such accurate screening, time will be saved for the registrant, work will be lessened for the induction boards, and expense will be saved to the federal government. Attention is directed to the necessity for examining all registrants *in the nude* and *in action* by a physician rather than by a lay member of the local board. We hope to publish the circular in full in the May issue.

RHEUMATIC FEVER TOLL HIGH

Rheumatic fever, one of the major enemies of child health in America today, and a leading cause of heart disease, may become an even greater menace as conditions favoring its spread now exist in many boom towns throughout the nation. This warning, which it stressed in a statement by Dr. Donald B. Armstrong, Third Vice-President of the Metropolitan Life Insurance Company, is based upon studies showing that overcrowding, makeshift housing facilities, and unhygienic surroundings may act as detonators to set off explosive outbreaks of the disease.

In West Virginia, statisticians of the company pointed out "the mortality rate from rheumatic fever is somewhat better than the average for the country as a whole. Its importance as a cause of death among children is shown by the fact that between ages 5 and 14 the only diseases outranking it as a cause of death are pneumonia and appendicitis both of which lead by only a slight margin. The importance of rheumatic fever is further indicated by the fact that infantile paralysis, generally regarded as one of childhood's greatest menaces, has in recent years, caused only one-half as many fatalities among West Virginia children in this age group."—*Metropolitan Information Service.*

General News

LEGISLATION PAVES WAY FOR HISTORY MAKING PACT

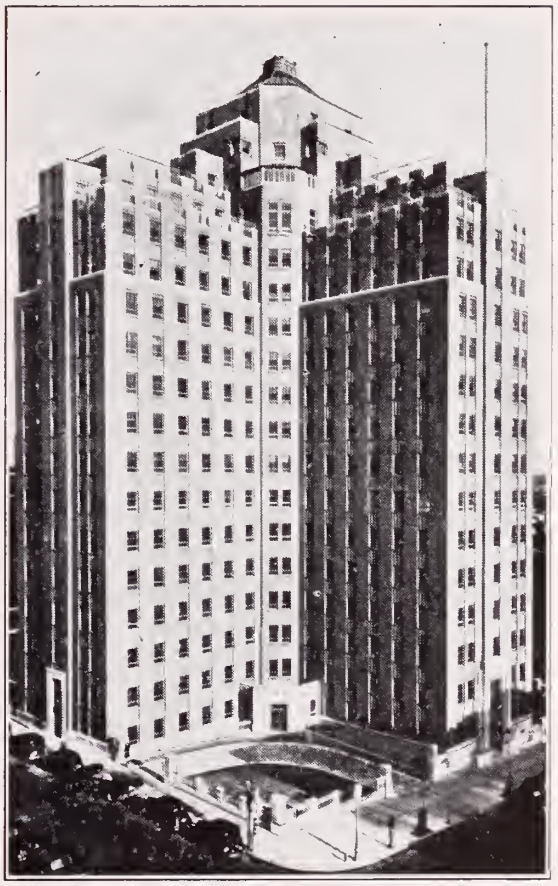
The enactment by the Legislature of a bill providing for a four-year medical course for West Virginia students at West Virginia University brought to a successful conclusion a campaign which was inaugurated during Dr. R. K. Buford's term as President of the West Virginia State Medical Association. At that time, Dr. R. J. Wilkinson, now President of the Association, conceived the idea of arranging with out-of-state medical schools to enroll a limited number of West Virginia students completing the premedical course at the University upon the same basis as third-year students at such schools.

Following favorable discussion of the idea in Council, Dr. Wilkinson, with Dr. Frank V. Langfitt, of Clarksburg, and Dr. E. J. Van Liere, Dean of the School of Medicine at the University, contacted several medical schools, visiting some in person, and submitting the interstate educational idea to the officials for consideration.

During the summer of 1942, a report was filed with the Council in which it was suggested that some definite plan could be worked out with the Medical College of Virginia for the enrollment of West Virginia students at the beginning of the fall semester in 1943. With the unanimous consent of the members of Council, the committee obtained the approval of Dr. W. T. Sanger, President of the Medical College of Virginia, at Richmond, of a plan for the enrollment each year at that college of twenty West Virginia students completing the two-year medical course at the University. Later, the plan was endorsed by the Board of Governors of the University and the Board of Visitors of the Virginia school. Support also came from Governor Neely, an alumnus of the University, and the result was that the necessary funds were included in the budget bill prepared by the Board of Public Works for submission to the Legislature.

A bill providing enabling legislation was introduced in the Senate by Senator Herbert Boreman, of Parkersburg, and in the House by Wright Hugus, a member from Ohio county. The senate bill (S.B. 85) was passed by that body and by the House without a dissenting vote, and was approved by the Governor March 9, marking the first time in the history of medical education that any such arrangement had ever been entered into by schools located in separate states.

The bill authorizes the Board of Governors of West Virginia University to enter into agreements that will enable the University to award degrees in medicine in conjunction with universities and colleges located outside the state. It also provides that a student to be eligible to take the course which will be established must have been a bona fide resident of West Virginia for at least five years. He must complete the medical course provided at the University, and be chosen for the purpose by the president and the faculty of the College of Medicine.



New Hospital at Medical College of Virginia

The plan as agreed upon by the University and the Medical College of Virginia provides that the diplomas received by the West Virginia students will show that they are graduated from West Virginia University as well as from the Virginia school.

The Medical College of Virginia was opened as a department of Hampden-Sydney in 1838. From

1854 to 1860 it was conducted as an independent institution, since which time it has been a state school. In 1913 it was consolidated with the Memorial Hospital and the University College of Medicine, founded by Dr. Hunter H. McGuire in 1893. The plant of the College, seventeen buildings, grounds and equipment, is valued at more than $5,000,000. The annual budget is approximately $1,500,000. Funds are derived from state and city appropriations, student fees, hospital service, endowments and miscellaneous sources.

The new hospital, a 600-bed institution, was dedicated in 1940. The cost of the project exceeded two and one-half million dollars. Dr. William T. Sanger has been President of the College for several years. Dr. J. P. Gray was named Dean of the School of Medicine in July, 1942.

DR. W. B. BROWN DIES SUDDENLY

Dr. William Byrne Brown, Director of the Division of Health Education at Stephens College, who died recently of heart disease, was a former West Virginian. He was a graduate of West Virginia University and Rush Medical College. His research in the field of control of the common cold had attracted wide attention, and he had just recently completed a series of conferences with physicians attached to the Mellon Institute. Besides his widow and one young son, he is survived by his parents, Dr. and Mrs. Charles N. Brown, of Swandale, West Virginia.

NEW SUPERINTENDENT AT PINECREST

Dr. E. H. Hedrick, of Beckley, has been appointed by Governor Neely as superintendent at Pinecrest Sanatorium, succeeding Dr. K. M. Jarrell, who has held the office since 1933. Dr. Hedrick took office as head of this state tuberculosis sanatorium March 22.

Dr. Hedrick graduated from the University of Maryland in 1917, and served in the medical corps of the army in World War I. He has been engaged in practice at Beckley since 1924 and served as County Health Officer for Raleigh county from 1924 to 1930.

NOW LT. COL. L. RUSH LAMBERT

Major L. Rush Lambert, of Fairmont, State Medical Officer for Selective Service, located at the Capitol, Charleston, West Virginia, has been promoted to the rank of Lt. Colonel, effective March 6, 1943.

BRIG. GEN. RANKIN, SISTER KENNY, CONVENTION SPEAKERS

The program for the 76th annual meeting of the West Virginia State Medical Association, partially completed, provides for the appearance of Sister Elizabeth Kenny, who has gained world wide prominence by reason of her success in the treatment of infantile paralysis patients.

Sister Kenny will probably appear at a public meeting to be held at the Shrine Mosque in Charleston on the evening of Tuesday, May 18. It is possible that she will demonstrate her technique at a clinic to be held at the Morris Memorial Hospital at Milton.

The program for the two-day meeting at Charleston, May 17-18, arranged by the Scientific Work Committee, composed of Dr. O. B. Biern, of Huntington, Chairman, and Drs. W. W. Point, of Charleston and C. O. Post, of Clarksburg, also lists as one of the speakers Brig. Gen. Fred W. Rankin, M. C., of Lexington, President of the American Medical Association and now attached to the staff of the Surgeon General of the Army at Washington. His subject will be "The Medical Department of the Army in Wartime."

Dr. Alan F. Guttmacher, of Baltimore, will speak on "Controversial Social Problems in Obstetrics and Gynecology." Dr. George P. Pack, of New York, will deliver an address on "Some Radical Principles in Surgical Treatment of Cancer."

The annual oration on medicine will be delivered by Dr. E. J. Van Liere, Dean of the School of Medicine at West Virginia University. Dr. Claude C. Coleman, Professor of neuro-surgery at the Medical College of Virginia, Richmond, will deliver the oration on surgery.

All Sessions at Daniel Boone

All sessions, except the public meeting, will be held at the Daniel Boone Hotel. The entire mezzanine floor has been reserved for the convention. General sessions will be held in the ballroom and scientific exhibits will be set up in the north end of the same room. Dr. Hu Myers, of Philippi, Chairman of the Committee on Scientific Exhibits, has stated that many worthwhile exhibits have already been arranged for the meeting.

Commercial exhibits will be set up in the sunroom and the clubroom, just off the mezzanine.

The pre-convention meeting of the Council will be held late Sunday afternoon and will be followed

by the first session of the House of Delegates. The annual meeting of the Publications Committee will be held at noon on Sunday. The formal opening exercises of the convention will take place Monday morning at 10 o'clock, and several scientific sessions will follow that day. The President's address is scheduled for Monday evening, to be followed by the second and final session of the House of Delegates. Scientific sessions are scheduled for the entire day Tuesday, and the convention will close with the public meeting Tuesday evening.

Reservations for rooms are now being accepted by the Daniel Boone Hotel. Those who desire accommodations away from the usual noise and activity of a convention may obtain rooms at any of the several first class hotels in Charleston. However, reservations should be made without delay, as hotel rooms are nearly always at a premium in that city.

Local Committee on Arrangements

Dr. Andrew E. Amick, President of the Kanawha Medical Society, has named the following Charleston doctors as members of the local committee on arrangements for the annual state meeting: Dr. T. G. Reed, Chairman; and Drs. Henry E. Baum, R. K. Buford, R. H. Dunn, W. Paul Elkin, V. L. Lance, Thos. W. Nale, J. U. Rohr, E. W. Squire, B. H. Swint, and A. A. Wilson.

WEST VIRGINIA DOCTORS AT QUANTICO

Several West Virginia doctors are still members of the staff at the U. S. Naval Hospital, Quantico, Virginia. Commander W. M. Sheppe, of Wheeling, who has been serving as Chief of Medicine of Naval Medical Specialist Unit No. 40, has been promoted to the rank of Captain, USNR, and Lt. Commander H. G. Little, of Wheeling, who is in charge of the laboratories, has been promoted to the rank of Commander, USNR. Captain Sheppe is an associate editor of the WEST VIRGINIA MEDICAL JOURNAL.

Lt. Commander Russel Kessel, M. C., of Charleston, is Chief of Surgery; Lt. Commander James K. Stewart, of Wheeling, is Director of the E. E. N. T. Department; and Lt. Commander A. L. Osterman, of Wheeling, is neuropsychiatrist.

Captain John Brewster, of Weston, is Executive Officer of the Hospital. Captain Brewster has been in the medical corps of the Navy for a number of years.

WEST VIRGINIA ONE OF FEW STATES TO ENACT SPECIFIC CANCER LAW

When, on March 19, Governor M. M. Neely affixed his signature to S. B. 36, West Virginia became one of a dozen states to place on the statute books a specific cancer law. All of the New England states have already taken definite legislative action. Georgia and South Carolina in the south, New York in the east, and Illinois and Missouri in the west have also enacted cancer laws.

The fight for a cancer control law in West Virginia began last summer with the appointment by the Governor, long an advocate of legislation looking to the treatment, control and cure of the disease, of a special committee to make a study of the cancer situation in West Virginia in cooperation with the legislative Interim Committee. The special committee was composed of the following doctors: Dr. R. O. Rogers, Bluefield; Dr. C. B. Wright, Huntington; Dr. Russel B. Bailey, Wheeling; Dr. J. Ross Hunter and Dr. G. C. Robertson, Charleston, and Dr. C. F. McClintic, State Health Commissioner.

Following a thorough study and consideration in the light of an investigation made by representatives of the State Health Department, the Interim Committee included a cancer control bill among the measures to be recommended to the Legislature for passage at the 1943 session. The measure had the full endorsement of the special cancer committee, the state legislative committee and the Council of the West Virginia State Medical Association.

The act as passed creates within the State Health Department a division of cancer control. Provision is made for the appointment of a head of the division by the State Health Commissioner in consultation with the Public Health Council.

The division is authorized, in consultation with the West Virginia State Medical Association, to set up cancer diagnostic and treatment clinics in hospitals meeting the standard minimum requirements that may be prescribed. Within the limits of funds available for the purpose, free diagnostic service and treatment is to be furnished needy patients.

A wide educational program is being planned to augment the important work being done by the Woman's Field Army of the American Society for the Control of Cancer. Mrs. John S. Harvey, of Huntington, is Commander of this organization in West Virginia. In the educational campaign, the importance of early diagnosis will be stressed.

Health authorities estimate that there are at least five thousand people in West Virginia afflicted with cancer. The annual toll is in excess of fifteen hundred. It is estimated by the National Cancer Institute at Bethesda, Maryland, that the lives of one-third of the 150,000 people who die of cancer each year in the United States could be saved if knowledge already in existence could be made available to them so that they might act without delay.

The budget bill passed by the Legislature the last day of the session provides an appropriation of $50,000.00 per annum for the treatment and control of cancer. The appropriation for the first year of the biennium will be available July 1, by which time it is expected that the new division of cancer control will be in operation within the State Health Department.

HOSPITAL SERVICE PLAN BILL PASSES

After a stormy life in the Legislature, the hospital service plan bill which emerged as a Committee Substitute for H. B. 120 became a law March 18, without the approval of the Governor.

The bill, in effect, legalizes the operation of hospital service plans in West Virginia. Supervision by the insurance commissioner is not provided for in the bill, which is effective only until February 28, 1945. This period was fixed in order to enable hospital associations and the medical profession sufficient time to draft a satisfactory bill for introduction at the session beginning in January, 1945.

Dr. R. J. Wilkinson, President of the West Virginia State Medical Association, anticipating the passage of the bill, has already appointed a fact-finding and planning committee, one of the chief functions of which will be to explore the whole field of medical and hospital service and endeavor to draft a bill that will meet with the approval of the doctors of West Virginia, as well as those who operate hospital service plans in various parts of the state.

INGERSOLL HEADS STATE D. P. A.

T. J. Ingersoll, Chief of the Division of Audits and Accounts of the State Department of Public Assistance, has been appointed Acting Director in the place of Raymond Kenny who had served as Director since April 1941, but whose nomination for reappointment was rejected by the Senate March 12.

OFFICIAL CALL FOR CONVENTION

Charleston, West Va.,
March 22, 1943.

To the Officers and Members of the West Virginia State Medical Association:

The 76th annual meeting of the West Virginia State Medical Association will be held at Charleston, West Virginia, May 17-18, 1943. Headquarters will be established at the Daniel Boone Hotel.

The House of Delegates will convene for the first session Sunday evening, May 16. The second session will be held Monday evening, May 17.

The Scientific Assembly of the Association will open with the general meeting Monday morning, May 17, at ten o'clock. The annual address of the President will be delivered that evening.

R. J. WILKINSON, M. D.,
President.

Attest:
CHARLES LIVELY,
Executive Secretary.

LT. BATALION MISSING IN ACTION

Lt. A. L. Batalion, of Ameagle, has been reported as missing in action since February 17, according to formal notification received by his wife from the War Department. Mrs. Batalion now resides in Fairmont. Lt. Batalion interned at Charleston General Hospital. He was commissioned first lieutenant in the army in October, 1942.

WAR CONFERENCE

The medical, surgical and industrial hygiene experts who are so ably safeguarding the well-being of more than twenty million industrial workers have agreed to pool their knowledge and exchange their experiences regarding the many new and complex problems of today's wartime production. The American Association of Industrial Physicians and Surgeons, The American Industrial Hygiene Association, and The National Conference of Governmental Hygienists are combining their annual meetings in a four-day "War Conference" at Rochester, New York, May 24-27, 1943.

Physicians and surgeons, hygienists, engineers, nurses, and executives who are interested in the problems of industrial health and their solution, are invited to attend the sessions. No registration fee is required.

Woman's Auxiliary

MRS. O. H. BOBBITT NAMED CHAIRMAN

Mrs. O. H. Bobbitt, of Charleston, has been named by Mrs. Ralph Hogshead, President of the Woman's Auxiliary, as local chairman of the committee on arrangements for the meeting of the Auxiliary which will be held at Charleston, May 17-18. Mrs. Harry V. Thomas of Clarksburg, is chairman of the program committee of the Auxiliary.

The program for the two day meeting to be held at the same time the West Virginia State Medical Association meets at Charleston will be announced shortly after the first of April.

SPEAKING ENGAGEMENTS POSTPONED

Mrs. Ralph Hogshead is still in Charleston at the bedside of her husband, who continues ill in that city. The condition of Dr. Hogshead is slightly improved, but Mrs. Hogshead, who is President of the Woman's Auxiliary, has been compelled to postpone indefinitely several speaking engagements before local auxiliaries.

An instance which reveals the care with which the budget was considered by the Legislature is contained in the reduction of legislative expenditures for "Attaches," a reduction which will save approximately enough money to pay for the new and very desirable Division of Cancer Control.—Report No. 10, West Virginia Chamber of Commerce.

American marriages will reach a new high in 1942, with a total that will be near 1,800,000. This will mark the fourth year of successive increase in marriages in the United States and will be an increase of about 80 percent above the number for 1932, the low point of the depression period.—*Statistical Bulletin, Metropolitan Life Ins. Co.*

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TUBERCULOSIS ABSTRACTS

(Continued from page 127)

individuals. A positive test shows that the skin has been sensitized by previous or present tuberculous infection. It does not prove that active pulmonary disease is present, but does call for an immediate chest x-ray. A negative test, conversely, is almost conclusive that active tuberculosis does not exist. There are exceptions to this statement, but they are rare.

Sputum examination is vital. A positive sputum leaves no doubt that active disease is present, but a negative sputum is no guarantee of its absence. There may be relatively few bacilli in a sputum sample; improper collection may provide saliva instead of thick material truly expelled from the lung by a spell of coughing; or too few samples may be examined. Reinforcing the simple smear are concentration methods, culture or guinea pig inoculations, and examination of the fasting gastric sediment in those swallowing their sputum.

Tuberculosis cases should be reported promptly to the public health authorities who assist in determining their disposition.

Many practitioners are not interested in treating tuberculous patients. Others feel they see cases so rarely that they would welcome assistance by experts. Sanatorium care, if available, promises conditions ideal for treatment and training of the patient and protection of his family and friends.

People who contract pulmonary tuberculosis usually do so because of intimate exposure to someone with a positive sputum. Thorough search is made in the patient's household and among his other associates, each being tuberculin tested and the positive reactors x-rayed. Obviously the x-ray, if showing nothing at first, should be repeated at four-month intervals for several years, as breakdown may be slow to appear.

The greatest contribution the general practitioner can make in the field of tuberculosis in wartime is the intensification of his peacetime effort, keeping the disease constantly in mind and remembering that the ultimate ideal in controlling tuberculosis would be to have every adult x-rayed annually.

General Practitioner's Rôle, Paul Geary, M. D., Bulletin of the National Tuberculosis Association, March, 1943.

The Essay Scientific!

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Many years' experience in making the cuts for THE WEST VIRGINIA MEDICAL JOURNAL has taught us to recognize the extreme necessity of bringing out the faint details and obscure shadows that mean so much to the scientific mind.

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THE WEST VIRGINIA MEDICAL JOURNAL

ATLAS BUILDING, CHARLESTON, W. VA.

The Committee on Publication is not responsible for the authenticity of opinion or statements made by authors or in communications submitted to this Journal for publication. The author or communicant shall be held entirely responsible.

WALTER E. VEST, M. D.
Editor
955 Fourth Ave.
Huntington, W. Va.

MR. CHARLES LIVELY
Business Manager
Atlas Building
Charleston, W. Va.

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ENTERED AS SECOND-CLASS MATTER, JANUARY 1, 1926, AT THE POST OFFICE AT CHARLESTON, WEST VIRGINIA

Vol. XXXIX May, 1943 No. 5

PROBLEMS IN GASTRIC SURGERY *

By RUSSELL McGINNIS, M. D.
Cleveland, Ohio

In presenting a paper on the problems encountered in gastric surgery, I shall discuss the factors as they have appeared to us at St. Luke's Hospital. This is an institution of about 400 beds, of which 25 per cent is devoted to the care of indigent and part-pay patients. When I was surgical resident but three types of operations were done on the stomach. These were closures of perforated ulcers, various types of gastro-enterostomies, and plastic operations on infants who were the victims of pyloric obstruction. Gastro-enterostomy was done for neoplasms producing obstruction, ulcers that did not appear to respond to treatment, healed ulcers that obstructed the pylorus, ulcers that were bleeding profusely, and in some rare cases for ill-defined stomach complaints. Simple closure of perforated ulcers and the Ramstedt operation remain standard procedures, but the performance of gastro-enterostomy is now relatively infrequent.

Gastro-enterostomy in many cases benefitted in that it partly neutralized the hydrochloric acid of the stomach by flushing this organ with the duodenal, pancreatic and bile juices. It was quite satisfactory in relieving pyloric obstructions due to cicatricial healing of duodenal ulcers. The frequent development of marginal or gastrojejunal ulcers, the so-called gastro-enterostomy disease, produced such serious problems that the operation has fallen into disfavor. The diagnosis of gastrojejunal ulcer was often made but was not always correct, as illustrated by the following case: A 40 year old man who gave a history of having had a gastro-enterostomy ten years previously, had symptoms similar to those present before the operation. He did not know, and no records were accessible, as to the former disposition of the appendix. X-rays of the colon did not reveal the appendix, and the medical attend-

THE AUTHOR

Dr. Russell S. McGinnis, graduate Jefferson Medical College, 1921; Acting Chief, General Surgery, St. Luke's Hospital, Cleveland, Ohio.

*Presented before Monongalia County Medical Society, Morgantown, West Virginia, February 2, 1943.

ant followed his case with rather indifferent success for three years. A flare-up of the old trouble terminated with localized pain, muscle rigidity and rebound pain over McBurney's area. At operation acutely inflamed appendix was removed and his gastrojejunal ulcer has not troubled him for the past eight years. The question naturally arises, did he at any time have a gastric or duodenal ulcer?

I have done one autopsy on a man whose health steadily declined after a gastro-enterostomy. Postmortem studies revealed the terminal ileum united to the stomach. I saw a similar case that was recognized and corrected. Under the title of "Gastroileostomy and Gastroileal Ulcer", Drs. Lucian A. Smith and Andrew B. Rivers of the Mayo Clinic recently reported nine cases. They see such a condition once in every one or two years. Diarrhea is usually present and the character of the stools is indistinguishable from that seen in gastrocolic fistula. The diarrhea is more severe when the anastomosis is near the cecum. There may be vomiting of the retention type, the vomitus may have a fecal quality, and there may be belching with a fecal odor. There may be loss of weight that is quite marked when no food passes through the pylorus. Severe pain, either of the bowel or ulcer type, may be present when ulceration is present. The treatment is surgical and requires disconnection of the anastomosis, excision of the ulcer, closure of the defect in the ileum and a gastrojejunostomy if the ulcer remains active. If no pathological condition is found, the gastric defect may be closed and the normal bowel continuity reestablished.

PROGRESS

It is interesting to trace the progress in gastric surgery, and when it is recalled that Woelfler's first gastro-enterostomy was reported in 1876 and that Pean, the famous Paris surgeon, did the first gastrectomy in 1878, we can feel considerable pride in the advancement made over a period of sixty-five years. Dieffenbach, only a little over one hundred years ago, said that the removal of cancer of the stomach was a dream of Merrem. He was the greatest European surgeon of his day and it was less than forty years later that the dream was to come true. Billroth resected a stomach for cancer in January 1881, and the patient recovered. He performed a similar operation on two additional cases, and thus was born the Billroth I operation. This consisted of uniting the narrowed distal end of the stomach to the proximal end of the duodenum. It was in 1885 that Billroth operated upon a patient in whom he found a large cancer of the stomach. The patient's condition was so poor that Billroth felt that he would not survive removal of the tumor; therefore, he performed a gastro-enterostomy. At the completion of the gastrojejunostomy the patient's condition was unchanged and Billroth decided that he would then remove the part of the stomach containing the tumor. The duodenum and distal end of the remaining part of the stomach were then closed. Thus the first Billroth II operation was performed. Billroth thought the number II operation would be suitable for cases in which the stumps of the duodenum and stomach could not be easily approximated after removal of the tumor bearing area. It soon became apparent that the Billroth II was an easier operation to perform than the Billroth I. The Billroth II was also safer and the Billroth I was gradually abandoned.

POLYA TYPE OF RESECTION

If the tumor is very large, the stump of the stomach may be so short that a Billroth II is very difficult, and it was in 1910 that Eugene Polya of Budapest was faced with a difficult resection. He anastomosed the jejunum directly to the stump of the stomach. It was later learned that Wilms of Heidelberg in 1909, Reichel of Germany in 1909, and Bergman of Riga in 1908 and 1909 had performed essentially similar operations. Polya was much surprised to find that Kronlein claimed to have done the operation in 1888. The facts are that Eiselberg, Mikulicz, Doyen, Graser, Hoffmeister, and Sasse had

published casual reports of this method between 1888 and 1910. The great majority of the surgeons, however, were not familiar with the method until 1910 when Polya started to publicize the operation, and he claims to have so influenced Dr. Will Mayo that he adopted the principle. We see that it actually took over 20 years to develop this one additional method in gastric surgery. Many minor contributions and modifications have been made but the Polya type of resection pretty generally meets all the demands of present day surgery.

This progress appears discouragingly slow, but it must be recalled that no real progress was made in the surgical treatment of breast malignancies until Halsted and Meyers made their contributions in the late nineties, and that the surgical management of bone sacromata has not improved by any great strides since the time of Samuel Gross.

While mere technical procedures may not impress us, we have made great strides in the past twenty years in gastric surgery. This advancement concerns principally the earlier recognition of malignancies of the stomach, the rehabilitation of the cachectic patient prior to major surgical procedures and great improvements in postoperative management such as decompression of the stomach, feeding through the efferent loop of the jejunum by means of indwelling catheters, the control of secretions that are prone to collect in the afferent loop by similar catheter decompression, the realization of the importance of recognizing and replacing lowered plasma proteins, the maintenance of the proper fluid balance and better physiological conception of the vicious vomiting cycles that formerly plagued the surgeon and many times proved disastrous to the patient.

MALIGNANCY OF THE STOMACH

Let us first consider the subject of malignancy of the stomach, and some factors influencing the curability of cancer of this organ. A report from the Bureau of the Census in 1938 showed a steady increase in cancer each year from 1920. There was also a steady increase in the annual death rate from this disease from the year 1920. No other disease listed had such a record. Diseases of the heart and accidents caused more deaths annually, but even they showed a variation from year to year. Cancer of the stomach is one of the most discouraging types of malignancy; it probably comprises 35 per cent of all cancers, causes one-third of all deaths from malignancy, and over 100 people die daily due to this lesion. The subject is creating more and more interest. Scarcely an issue of the better known surgical journals omits some phase of the subject and consequently a great fund of information bearing on the incidence, pathology, treatment and statistics is being collected. It is unlikely that cancer occurs in a perfectly normal stomach, and the occurrence of atrophic or hypertrophic gastritis is a frequent precursor of carcinoma. To speak of irritation alone as a cause is not enough unless another factor, tissue susceptibility, which is probably inherited, is added. Chemists know that there is high estrogenic activity in synthetic hydrocarbons whose carcinogenic activity has long been known. This may be suggestive when it is recalled that the disease occurs most frequently in the male at the involutional period.

FIVE YEAR CURES

Much conflict is found in reports as to operability and the incidence of five year cures. Some think gastric cancer is hopeless for 95 per cent of its victims, yet reports of 10 year cures are becoming more frequent. In a series of cases that showed no metastases at the time of operation, Warwick reported 48 per cent free of recurrence after five years. The great importance of early surgical intervention is seen when one studies the statistics of Abrahamson and Hinton, who found that out of their large series 4.6 per cent, 7.4 per cent, and 5.5 per cent, were amenable to surgical treatment. Other reports are equally gloomy and many surgeons admit they have never seen a cure of gastric cancer in their own practice. Owen estimates that there are 150,000 people in the United States who

have cancer of the stomach. He feels that 27,000 of this group may be resectable cases. Pack and Livingston estimate the number of resectable cases at over 10,000. To appreciate fully the small percentage of people who are given a chance for cure, we have only to recall that but 3,000 resections for cancer of the stomach have been reported in this country in a period of sixty years, that is from 1878 to 1938. This is appalling when it is realized that 1,500,000 have died from the disease during the same sixty year period, and that of this group only 1 of every 1,500 had a gastric resection. It is quite evident that in spite of repeated emphasis placed upon the subject the public is not yet conscious of its serious import, and the profession is not using to the greatest advantage all the information at its command.

CONSCIOUSNESS OF SYMPTOMS

Limitation of the growth to the stomach does not necessarily mean that it is of recent origin. A preinvasive state might exist for a long time and mild unrecognized symptoms might thus be explained. In some cases consciousness of symptoms comes only after they have repeatedly occurred or have gradually become intensified. Dr. Ogilvie suggests that we write in neon signs in every public eating place: "Indigestion does not start after forty in a man who has been able to eat anything till then", and that all physicians keep in mind that gastric ulcer rarely starts after forty. We should investigate carefully every case of indigestion starting in middle age and unequivocably label every ulcer developing after forty as cancer until gastroscopic and x-ray studies show its complete disappearance under a brief intensive period of medical management. When physicians become eternally suspicious of the lesions and follow up their suspicions with proper studies and correct management, then and then only, will the surgeons receive these cases when radical surgery offers a fifty-fifty chance of a five year cure.

In summarizing we may state that the factors which influence the curability of the disease are those which make possible the early recognition and prompt surgical removal of the tumor. These factors pertain first to the patient and second to the physician and may be considered under these headings: (1) a sensitive patient, (2) a suspicious clinician, and (3) a searching roentgenologist and gastroscopist, and a skillful surgeon.

THE SENSITIVE PATIENT

It is a fact that many person consider a mild degree of gastric distress to be a part of the normal process of growing older, and in their minds "indigestion and dyspepsia" merely indicate an uncomfortable but entirely benign process. Yet within these two words is the whole story of early gastric cancer symptomatology. Under these headings we must include the onset of stomach distress coming on in a perfectly healthy subject, loss of appetite or change in food desire, a feeling of slight weakness or easy fatigue and an unusual family history of cancer. At this stage the patient is not emaciated, cachectic, has not been vomiting for months and has only recently noticed any variation from what he considers his normal eating habits or sense of stomach well being. He is likely to be ruddy cheeked and there are seven to eight chances out of ten that he is a male, with one chance in ten that he is under forty years of age. His symptoms are vague, irritating rather than painful, and he hears his condition described at frequent intervals over the radio by a glib announcer, along with recommendations for complete and lasting relief.

According to Alvarez, these seem to fall into two groups: (1) those who are eternally suspicious of gastric ulcer and never find it and (2) those who are never suspicious of it and eternally miss it. The first group complains of the futility of their efforts and the second comments on the futility of the disease. It is somewhat humiliating to admit that we as physicians lack perception and suspicion of symptoms. Alvarez, as you may recall, in questionnaires sent to physicians with organic stomach pathology, found that over 50 per cent had definite symptoms for one year

before seeking relief. As a matter of simple precaution, it would seem advisable for every physician, at least those in the middle age group, to have made a gastro-intestinal roentgenographic study and a gastric analysis as a part of his personal medical record. In those cases with cancer of the stomach, 70 to 80 per cent show a very low or complete absence of free hydrochloric acid. The careful clinician, however, will not permit a normal or even high acid curve to relax him in his search for organic disease when symptoms point to an abnormal stomach. Dean Lewis taught his students that achlorhydria was one of the most valuable early signs of cancer. Homan and Sandusky, in a recent report, state that low acidity or anacidity remains the single most reliable evidence of cancer. Eusterman has shown that the acidity is practically always below normal in patients destined to develop carcinoma of the stomach and that this low acidity appears early in all ages and is persistent.

THE ROENTGENOLOGIST

In expert hands, the accuracy of diagnosis approaches 100 per cent. In other than expert hands, attempt at diagnosis is useless. The failure in x-ray diagnosis is largely in cases of ulcer carcinoma, where, after all, the problem of differentiation between benign and malignant lesions can be done only by the pathologist. The exact percentage of carcinomatous changes that takes place in a benign gastric ulcer is not of great practical importance if it is remembered that a high percentage of gastric ulcers are malignant and should be treated by surgical excision if response to medical management is not prompt and permanent as shown by successive roentgenographic studies made at frequent intervals. Cole has demonstrated the pathological basis upon which early roentgenologic diagnosis can be made and minor but persistent defects in peristalsis due to infiltration of the submucosa by cancer cells can de demonstrated. The lack of pliability, he feels, is the most delicate of the roentgen ray findings. The value of many rapidly taken and superimposed films has also been demonstrated by Ledoux-Lebbard who shows their use in the detection of obliteration of the rugae, changes in the mucosal pattern and persistent defects in peristalsis. It may be added that gross filling defects, caused by ulceration or tumor, are not due to early lesions. If available, the services of an experienced gastroscopist should always be sought. Occasionally, gastroscopy may give data not otherwise obtainable and it should be a part of routine stomach studies when possible. The gastroscopist's work is an adjunct to careful roentgenologic studies and, as in the x-ray studies, the value is directly proportionate to the skill of the gastroscopist.

THE SURGEON

The sensitive patient, who has been studied by the suspecting doctor, the skillful roentgenologist and the trained gastroscopist, will likely now come under the care of the surgeon. There is probably no other condition in abdominal surgery that demands as high a degree of skill and as wide an experience as does the surgery of gastric cancer. The surgeon's problem comprises many elements. Briefly enumerated they are: (1) an evaluation of the patient's resistance, (2) institution of methods to increase that resistance and safeguard the patient, (3) decision as to the resectability of the lesion, (4) the actual resection of the tumor, (5) the reestablishment of the gastro-intestinal tract and (6) the mental and physical rehabilitation of the patient after operation. No surgeon should attempt to operate upon a patient with cancer of the stomach unless he is qualified and intends to resect the growth in the most radical manner.

The patient's cardiac reserve should be investigated, oral hygiene should be corrected and blood chemistry studies should be done to determine the loss of chlorides, the state of plasma proteins and any retention of nitrogenous elements. Many of these patients are dehydrated, and due to hemoconcentration the actual degree of anemia may be overlooked. It is our policy to insert a catheter

into the stomach, irrigate it at frequent intervals with normal saline, and instill one dram of dilute hydrochloric acid, which is left in the stomach until the next irrigation is performed. Those cases with a marked degree of obstruction may be prepared for nine weeks or longer. It is often surprising to see some of these cases open up and if the pylorus becomes patent, moderate amounts of the proper foods may be given. This will help to correct the hydration, hypoproteinemia, any fall in the blood chlorides, and will improve the kidney function. I believe the administration of thiamin chloride (15 to 25 mg.), cevitamic acid (50 mg.), and nicotinic acid (100 mg.), to be indicated. The vitamin C deficiencies are pretty generally believed to be associated with poor wound healing and in many of the late cancers this factor may be quite marked. Dehiscence of the wound is not an infrequent postoperative complication and at secondary closures one is amazed at the complete lack of evidence of normal healing.

USE OF AMINO ACID PREPARATIONS

We have had no experience with the intravenous administration of amino acid preparations to correct the lowered plasma proteins. They are probably helpful, but we have relied on whole blood transfusions before and during the operation, and injections of plasma at frequent intervals if blood studies show the proteins to be falling below normal during the immediate postoperative period. The maintenance of normal proteins has been one of our most difficult problems. The development of edema and evidences of poorly functioning stomata are almost certain clinical signs of hypoproteinemia. It should be confirmed by blood studies and 250 or 300 cc. of plasma given at once. No hesitation should be felt in repeating the administration of plasma every few days, or until the patient can take proper foods in desirable amounts by mouth. This phase of postoperative care should not be forgotten when the patient goes home for he can easily lapse into the hypoproteinemic state, and when he is brought back into the hospital he may, in addition, be in severe alkalosis. One of our cases who had a gastrojejunostomy for relief of a stenosis of the pylorus caused by strong chemicals was sent home only to return one week later in very advanced alkalosis, severe dehydration from vomiting and with his protein level down to 3. His operative wound was reopened, the stomach incised above the anastomosis, and with the organ laid open it was impossible to see or feel either the afferent or efferent stoma. The afferent loop was dilated, a jejunojejunostomy was done and the catheter previously placed in the stomach was pulled down into the efferent segment by an instrument introduced into the stomach through the opening made in the efferent loop. This man's chlorides were down around 300 and his CO_2 combining power was 125. Proper amounts of chlorides were given along with a whole blood transfusion and within twenty-four hours his clinical improvement was almost unbelievable.

FEEDING

It is our practice to insert a Rawson Abbott tube into the stomach prior to operation, and insert the feeding part of this tube into the efferent loop for 12 to 18 inches before closing the anterior layer of the anastomosis. Feedings are started in six to twelve hours by the drop method. This tube permits decompression of the stomach along with feeding through the efferent loop. The rate of feeding has to be regulated by the degree of discomfort that may be produced. I feel it is quite important to make twenty-four hour records on the amount of fluid aspirated from the stomach and the amounts introduced into the stomach or the efferent loop of the jejunum. The drainage at first shows some blood that usually entirely clears by the end of 24 or 36 hours. Later it may become slightly pale and yellow, which is favorably interpreted in that it indicates a patent afferent stoma and that the secretions that normally empty into the upper duodenum are not being retained. Failure of this loop to drain properly has been studied by Wangensteen

in particular. He feels that failure to drain the afferent loop causes dilation, is associated with high temperature, is at times evidence of cerebral activity, and states that death ensued in 4 of his cases that were studied at autopsy. It functionally amounts to obstruction of a closed segment of this portion of the duodenum and jejunum with changes in capillary permeability, at times gangrene, and the mortality may be 100 per cent. He has suggested the use of a forked catheter, one part of the Y to enter well down into the afferent segment, the other part to enter the efferent loop. Many surgeons perform a jejunojejunostomy after resections for carcinoma. The use of this tube would eliminate this procedure. This type of case has probably been signed out as death due to postoperative pneumonia in many instances where autopsy examinations were not obtained. Wangensteen, insofar as I know, was the first to make this observation.

For the first few days the amount of fluid aspirated from the stomach is often high, 1,000 cc., or, in occasional cases, 1,500 cc. If 500 cc. of solutions have been given orally we can see that the fluid or gastric balance is negative 500 or 1,000 cc. This fluid loss must be made up by other methods to maintain an intake of 2,500 to 3,000 cc. This is not, however, the most serious import of the condition. If it persists after the catheters have been withdrawn, vomiting will surely follow, and the surgeon is faced with the fact that the efferent loop is not draining. This is poorly tolerated in an aged or cachectic patient. Close daily studies may show that the gastric balance is switching to the positive side. That is, the gastric intake exceeds the drainage and the surgeon breathes easier. If the balance remains for many days on the negative side he may try to console himself with the thought that everything will turn out all right. Sometimes it does; the stoma starts to drain well and rapid improvement follows. In other cases the patient steadily declines and dies unless the condition is corrected. A jejunostomy may be done or a kink, producing obstruction, may be found. The explanation may not be mechanical or chemical but a jejunostomy may be a life-saving measure and after a few days or even as late as seven weeks, the stoma has been observed to start functioning.

MALIGNANT POTENTIALITY

Among laymen and particularly among physicians, there has been a lamentable lack of appreciation of the malignant potentiality of gastric ulcers. It is not really so important to quibble as to whether or not a particular malignant lesion was once a benign ulcer as to attempt to determine immediately whether or not the lesion under consideration is malignant. Through sad and bitter experience it has been learned that there is no method by which an unequivocal clinical diagnosis may be made as to the malignancy or benignancy of any ulcerating lesion of the stomach. At the Mayo Clinic it was observed that some type of abnormal lesion of the stomach was noted in 99 per cent of the cases in which a malignant lesion was present. They also diagnosed 9 per cent of the carcinomatous lesions as benign before operation, and what is more significant, in 18 per cent of all cases of cancer of the stomach in which x-ray diagnosis was made, it was not possible to determine the exact nature of the lesion. One of the most completely studied groups of cases was reported by Allen and Welch. This dealt with 277 cases in which a surgical diagnosis of gastric ulcer was made. In 35 of the 277 cases, or 14 per cent, the lesion was cancer and from this study they have seen fit to recommend operation if the following conditions prevail:

1. The gastric ulcer is of short duration, and the patient is more than 50 years old.
2. The ulcer is more than 2.5 cms. in diameter.
3. There is no free hydrochloric acid in the gastric contents.
4. The ulcer is situated on the greater curvature or in the prepyloric region.
5. The ulcer is chronic and is situated on the lesser curvature.

They recommend hospital observation and treatment for 1 month under the following conditions:

1. The ulcer is acute and the patient is young.
2. The ulcer is less than 1 cm. in diameter.
3. The ulcer is on the lesser curvature, or on the anterior or posterior stomach wall.

If the ulcer is completely healed at the end of one month the patient is discharged and similar studies are carried out for a few months at monthly intervals. If the ulcer is not completely healed at the end of one month, operation is advisable. This one fact cannot be too strongly emphasized: At least 30 per cent of cases with cancer of the stomach portray the symptomatological picture of ulcer, and although the ulcer may give every evidence of having healed, roentgenologically, gastroscopically, subjectively and by the disappearance of occult blood from the stools, a malignant lesion may be demonstrated within a very few weeks after the fulfillment of these accepted criteria for a benign lesion. Some improvement in the "salvage" rate of these patients with gastric cancer may be expected with the development and refinement of the more extensive procedures. However, the really promising field undoubtedly exists in the promulgation of the importance of early diagnosis and a wider recognition of the malignant potentiality of every ulcerating lesion of the stomach.

TREATMENT AND MORTALITY

What place does surgery have in the treatment of massive hemorrhage from a gastric or duodenal ulcer? At present, information is not available to answer this question. Statistics vary and only trends in this type of surgery will be discussed. It is now pretty generally recognized that this complication is a greater hazard than we formerly believed. The newer medical plans of treatment such as the Meulengracht, the aluminum hydroxide introduced into the stomach by gastric intubation and the so-called massive transfusion method described by Marriott and Kewick, have not proved greatly superior to the older starvation plan of therapy. At the Albany Hospital, Walch and Yunich reviewed 690 ulcer admissions over a nine year period. One hundred and twenty-eight, or 18.6 per cent, were admitted because of bleeding; eighty showed severe hemorrhage; forty were mild. They found duodenal ulcers four times as frequent as gastric, but they had but 17 of the 128 cases of hemorrhage in gastric ulcers, an incidence of 11.6 per cent. The incidence of bleeding in duodenal ulcers was 20.4 per cent. Their mortality rate was 8.8 per cent with the conservative plan of treatment. The mortality rate for the men was 10.8 per cent and for the women 7.7 per cent. This is much higher for the women than is reported by some authors. Of the bleeding gastric ulcers the mortality was 35.3 per cent, while that of duodenal ulcers was 6.3 per cent. All authorities are in agreement as to the importance of age; one author states that his death rate in patients under the age of 50 years was 1.3 per cent and over 50 years 20 per cent with a conservative plan of therapy.

MORTALITY FROM BLEEDING ULCERS

Waltman Walters thinks the mortality from bleeding ulcers of the posterior duodenal wall may run from 3 to 8 per cent. He thinks the recurrent type of bleeding in this group should be considered for surgery during the nonbleeding period. Schenken, Burns and Maes of the Charity Hospital in New Orleans, were impressed by the greater frequency of duodenal over gastric ulcers, and the increased death rate of bleeding ulcers when moderate or severe hypertension existed. This, of course, would be more frequent in a group from 50 to 55 years of age. Crohn and Lerner report a mortality of 6.5 per cent in a series of 215 patients treated medically and a total mortality of 11.6 per cent when they included 75 patients who were operated on. Hurst and Ryle have pointed out that the only true mortality can be gained from the statistics gathered by general practitioners, since they have the opportunity of seeing all cases of hem-

orrhage. Lahey, in a series of 108 acute gross hemorrhages, reported a mortality of 4.8 per cent. He is quite conservative but believes surgery may save lives if satisfactory criteria were available to judge or pick out the type of case that will not respond to the usual medical measures. He feels that fainting, a rapid decrease in blood volume, collapse, fall in blood pressure ot 90 systolic or lower and a pulse rate of 130 or higher are indications for blood transfusions. He feels that when given slowly they are safe and of distinct value. Continued bleeding that cannot be controlled by proper transfusions usually means bleeding from a large vessel, and if it occurs in the proper age group and is associated with the clinical picture just described, little time should be lost in operating.

HEMORRHAGE

It is my belief that the internist and surgeon should approach every case of hemorrhage with an open mind. Each case must be decided on its merits. If proper selection can be made, there is no doubt that some lives may be saved by surgery. I believe, however, that the group must be selected with great care and that we must not lose sight of the fact that surgery itself carries a very definite mortality. A blood urea nitrogen of 50 to 70 mg. per cent in a patient with massive hemorrhage is a grave omen, and in the presence of repeated hemorrhage a blood urea nitrogen curve which continues to rise or remains abnormally high is usually associated with a fatal outcome.

For the immediate management, I would suggest the introduction of a Levine tube, lavaging the stomach with warm saline until the stomach is free of blood clots, and the preparation of donors. The Levine tube lessens straining and reverse peristalsis by quieting nausae, and if lavage removes a clot it is probably useless as a true thrombotic plug for an eroded vessel. In a patient 50 years of age or over, continued bleeding, rapid pulse, air hunger, restlessness and a falling blood pressure call for blood transfusions.

If, after transfusion, the red cells and hemoglobin continue to decline, bleeding is taking place probably from an eroded vessel and immediate operation should be considered. The transfusion should be continuous throughout the period of the operation. Partial gastrectomy is the operation of choice. At times a suture ligature of nonabsorbable material may stop bleeding in a posterior duodenal wall ulcer. Bleeding, however, may recur after this procedure. Gastro-enterostomy *per se* should be of real value in stopping bleeding. Surgery may be more difficult in a chronic perforating posterior duodenal ulcer than in a gastric ulcer.

PYLOROPLASTICS SELDOM USED

Continued symptoms or bleeding that develop in a jejunal ulcer should be treated preferably by taking down the anastomosis and doing a gastrectomy of the partial type. If the patient's condition will not permit gastrectomy, simple restoration of the gastrointestinal pattern may be done. My best results have followed this procedure.

Various pyloroplasties such as those of Finney and Horsley are but little used. Like gastrojejunostomy they served an important place, but are being replaced by more radical methods such as subtotal gastrectomy, which more effectively reduces the acid factor, this being the most important single thing to be accomplished.

Sarcomata are infrequent, grow rapidly and may occur in a younger age group. They should be treated as carcinomata are handled.

Benign tumors of epidermal or mesodermal origin may lend themselves to ready removal; when intragastric they ulcerate and cause bleeding with profound anemia.

Gastrocolic fistulæ may represent the most difficult surgical problems. Pfeiffer's recognition of the simple principle of colostomy proximal to the fistula may prevent regurgitation of the colon contents back into the stomach, and will permit rehabilitation of this type of patient so that surgery can be done easier and with a greatly reduced mortality.

EFFECT OF CURRENT TRENDS IN THE CONTROL OF MEDICINE*

By EBEN J. CAREY, M. D.
Milwaukee, Wisconsin

EVERY true American appreciates and accepts, during an all-out war, centralization of authority, rationing of material and regimentation of manpower in the pursuit of that war to victory. All of our energies must be directed toward winning this war and the ultimate restoration and preservation of our liberties. Otherwise, victory may be almost as disastrous as defeat if we were to find ourselves eventually under the crushing heel of an American dictator in the postwar period.

One great responsibility of the medical profession, in spite of shortage of professional manpower and increased demands on the time of the private practitioner, is education of the public. Such education needs to be what one might call positive and negative—positive as to the contributions of the doctor, the nurse, and the hospital under the voluntary system, and negative in making clear to the public what political medicine, dentistry, nursing and hospital care would mean in its "full bloom." The "patient first" idea cannot be imagined when it is governed by the politician as we know him. The earnest and sincere attitude of nurse and doctor, so appreciated by anyone who is sick, would be replaced by a mechanical attitude, reflected from the introduction of the political bureaucrat.

Bismarck (1881) brought the German people under the iron heel of the military dictator by giving them political contract doctors and a promise of good health when he was incapable and unwilling to give them independent jobs with good pay. Many European countries followed Bismarck's example. Is America ready to follow the same course of disaster?

*Read before the National Conference on Medical Service, Chicago, Illinois, February 14, 1943.

THE AUTHOR

Dr. Carey, Dean, Marquette University, School of Medicine, Milwaukee, Wisconsin, and Professor of Anatomy; Fellow of American Association of Anatomists; Radiological Society of North America, Inc.

Medicine is a part of society. It is the province of medicine to supply unselfish leadership and adequate social adaptability. Medicine should take stock of its past activities and reevaluate both its successes and failures in the fields of science and social relationships. Have the health professions (medicine, dentistry, pharmacy, nursing, hospital administration and social activity) demonstrated to the public good cooperation among themselves and discharged their responsibility to educate adequately the public in matters pertaining to private and public health? Unless these are achieved and accomplished soon, America will see its health sold out for a few pieces of silver. Medicine has wide educational responsibilities to the public that radiate beyond the bedside and laboratory and extend into the home, school and deliberative assembly. The future educational policy of American medicine cannot be turned over to the purseholder of prepayment plans.

Medicine's future is bright if its members remain alert and if those in it are willing, like the press, at the drop of a political hat to fight, and if, at the same time, they are willing to alter their attitude if it is demonstrated conclusively and scientifically that their social compass is pointed in the wrong direction. But!—medicine will insist on proof and not on political promises that will eventually lead to the financial exploitation of both the sick and the well.

Rear Admiral Ross T. McIntire, Surgeon General of the Navy and personal physician to the President, has said: "It is my hope that we shall never see medicine in this country subsidized by the government. When this war is over, our doctors are coming back to this country. There will be thousands and thousands who will go back into civil life, because the Army and Navy will shrink, as they should, but I hope never to the point they did before. These men are coming back with a different slant on things than they had before. I think we must be careful that they do not come back with the idea that they can practice only one form of specialized medicine. I hope the time never comes when the practice of medicine, or anything that has to do with it, has to come under government control. It would be a disaster to this country; it would be a disaster to medicine."

PREMEDICAL STUDENTS

In accordance with the urgent recommendation of the Association of American Medical Colleges and the Council on Medical Education and Hospitals of the American Medical Association, the minimum admission requirements have been reduced for the duration of the war, so as to permit the admission of students who present the minimum admission requirements of this Association which consist of four semesters or six quarters of college work, including English, theoretical and practical courses in physics, biology, general and organic chemistry, completed in institutions approved by accrediting agencies acceptable to this Association.

This does not reduce the present subject requirements of this school although minor deficiencies may be waived, and these subjects should be condensed into four concurrent semesters or six concurrent quarters. It may require readjustment of chemistry courses so as to cover the aliphatic and aromatic series and experience with quantitative methods into the time available. It is advisable that study schedules be adjusted as promptly as possible to this concentration on technical premedical studies.

The class of March, 1943, is already enrolled and is, therefore, not affected by this ruling. With the class of October or November, 1943, students with two years of premedical training will compete with students who have already completed more than this minimum. The competition may, therefore, be even more severe than usual.

According to a memorandum to deans of medical schools dated February 5, 1943, from the Executive Council of the Association of American Medical Colleges it was stated that those responsible for the administration of the army specialized training program expressed today their opinion that the acceptance at this time of qualified applicants for admission to medical schools during 1944 would be of assistance in that program and recommend such a procedure. Medical schools beginning February 9, 1943, may accept qualified students for admission beyond the next incoming class and for first year classes opening in 1944.

STUDENTS ELIGIBLE FOR MILITARY SERVICE

Students so admitted, who are eligible for military service, may be assigned under the army program to medical schools other than those which accept them. The number of students that the army or navy may accept for training at any one time may be limited. The students will be subject also to reassignments, pooling by service commands, restrictions in choice of service and other regulations which may be imposed by the authorities upon all students eligible for military duty and upon all institutions holding government contracts when the army-navy programs become effective.

The detailed plans that will be adopted by the army and the navy for recent high school graduates from 18 to 22 years of age, have not been completely worked out. During this period of transition, there is bound to be considerable confusion on the part of members of local draft boards in reference to the eligibility of recent high school graduates for deferment as premedical students. It is with sincere hope that the army and the navy

plans are soon known by the authorities of selective service in order that an adequate supply of young physicians may be conserved.

A memorandum was received February 6, 1943, from the Federal Security Agency, U. S. Office of Education, Washington, D. C., which contained the following:

"Temporary deferment for college and university students and instructors in certain medical, engineering, and other technical fields is authorized in a new bulletin to local selective service boards, enlarging previous deferment provisions, Chairman Paul V. McNutt of the War Manpower Commission announced today.

"Students who will be deferred until the end of the academic term which is in progress on March 1, 1943, include:

"1. All medical students (including hospital internes and residents), dental students, and veterinary students enrolled in approved institutions and subject to selective service; and all premedical, predental, and preveterinary students who have completed one year of study in approved institutions."

MEDICAL STUDENTS

The tentative plan of the army has been announced as follows: "Medical students in the enlisted reserves will be called to active duty at the end of the first semester which begins in 1943, then detailed to their present studies under contracts which the war department will make with the respective colleges. Medical students with commissions in the Medical Administrative Corps will be allowed to resign these commissions for the purpose of reenlisting as privates in the enlisted reserves, for assignment under the college training program to continue their studies. Premedical students will continue in an inactive status until the end of the next semester, at which time they will be inducted into the army, and "selected" students assigned to continue their studies under the college training program.

On February 2, 1943, the commanding general of the Sixth Service Command, Chicago, Illinois, suspended authority for appointment of medical students as second lieutenants in the Medical Administrative Corps, Army of the United States. This means that during the undergraduate years, the medical students in the future will have a status as privates on active duty. The exact way in which this is to function and the financial remuneration to these professional students as privates have not been definitely settled.

PROGRAM OF THE NAVY

The tentative program for medical students under the jurisdiction of the navy has been announced as follows: "Those in navy approved medical, dental, and theological training (on accelerated programs) will continue as apprentice seamen, and will continue their studies. Those holding H-V(P) (inactive) commissions will be allowed to resign them, at a date to be announced in the near future, for the purpose of reenlisting as apprentice seamen, for assignment to the college training program to continue their studies. The navy plans to provide clothing, quarters, and subsistence, the men to receive the pay of apprentice seamen ($50.00 monthly) while on active duty. These men will be recommissioned upon the completion of their prescribed professional education. Men now classified under H-V(P) need not resign their commissions unless they desire to do so. Naval ROTC units will continue, with additional members chosen from trainees in the college training program, after the first two semesters."

At the special meeting held in Chicago in February, 1942, the Association of American Medical Colleges reviewed such problems as maintaining an adequate medical student body, a minimum but essential faculty, a twelve months' internship and resident staffs in our teaching hospitals. The accelerated program was adopted at this special meeting. During the past year, virtually all of the medical schools rearranged their schedules in such a way that teaching has continued practically on a year round basis, so that students may complete their required medical

school work of four academic years in three calendar years. Many schools have provided the medical personnel for affiliated reserve hospital units for the Army or the Navy Medical Corps. Other faculty members voluntarily have entered active military duty or other government work.

MEDICAL SCHOOLS IN THE WAR EFFORT

The medical schools of the United States have a very definite place in both the present war and postwar efforts. In the first place, medical schools should understand that all of their efforts are a part of the war program. All our students should be prepared for active and competent participation in this war, either through military or essential civilian service. All able-bodied male students are destined for the armed forces. Already we have adopted an accelerated program and have increased the size of our classes so that we are producing a maximum number of doctors in as short a time as possible with our present facilities and without any lowering of present standards of education. However, the medical course should not be curtailed or shortened in any way, as it is absolutely necessary that our medical graduates be well qualified and capable. No reduction in the standard or quality of our teaching can be permitted if we are to continue to produce safe practitioners of medicine. Nevertheless, it is incumbent on medical schools to modify their curricula in order to stress such subjects as military medicine, industrial medicine, tropical diseases, nutrition, first aid and public health.

The accelerated program will produce about 5,000 more graduates than normally during the next three years when they will be needed urgently. The Selective Service system has recognized the essential functions of medical officers and the importance of insuring a continuous supply of doctors by urging on local boards that "no student or intern who gives reasonable promise of becoming an acceptable medical doctor be called to military service before attaining that status."

The accelerated program of medical education has placed a severe financial drain on the student of medicine. Many medical students, heretofore, have utilized their summer vacations to work and thereby accumulate an adequate amount of money partially to defray the expenses of their education. Fortunately for many medical students, the W. K. Kellogg Foundation of Michigan, gave a substantial sum of money to the various medical schools of the United States to be used as a revolving loan fund to needy medical students. The United States Government has likewise given a substantial sum to each medical school to aid medical students in their financial need. Some of the university governing boards and private individuals have given financial aid. If the medical students in the future receive the pay of a private of $50.00 a month, and a certain amount for lodging and subsistence, the medical student will be, in the near future, deprived of financial worries.

PROCUREMENT AND ASSIGNMENT SERVICE

The Procurement and Assignment Service, now a part of the War Manpower Commission, is reviewing the declarations of all medical schools concerning their essential faculties for teaching and research. This agency has recommended that minimum essential faculties be preserved, and has certified, as not available for military duty, physicians who occupy essential teaching positions. Instructors within the age of compulsory military service, who cannot be replaced by equally competent personnel not eligible for military duty, may be retained by this means. It is vital, however, that this deferment be made with a thorough knowledge of local requirements, facilities and personnel.

During the war, medical care, medical education and research will be put to a severe test in the evaluation of what is essential and nonessential. The proportion of the population above fifty years of age has about doubled since the Civil War and will be almost trebled by 1975. The effect of this fundamental change in the composition of our com-

munities is of significance not only in the field of medical care and the health of individuals but is of great importance in relation to employment, family life, recreation and politics. The shift in the age distribution will be reflected more and more in medical teaching, research, nursing and hospital care. The new science of geriatrics was practically unknown 20 years ago. The degenerative disorders of the heart, blood vessels, kidneys and joints, together with the various forms of malignancy account for 60 per cent of the deaths in individuals over 40 years of age and for most of the disabilities in individuals 50 years of age and over.

The spectacular results from the sulfa drugs have added a whole new and gratifyingly successful field of traetment for many obstinate and frequently fatal infections. The newer developments in nutrition, shock, radiation therapy, endocrinology, the virus diseases, immunology and surgery have had a profound influence on medical instruction and research. These and many other contributions will play important rôles in the medicine of tomorrow for which we must prepare today.

No one can predict, at this time, what the form of medical care will be in the future. However, it is vitally important that medical students and physicians be prepared in the public interest to initiate and guide the responsibilities of the professions under the various changes in the political, social and economic conditions. The prime responsibility in maintaining the health and dispensing medical care in the future must rest upon the shoulders of the trained physician.

POLITICAL DANGERS

Unless a way is found to correct the lack of effort and facilities to promote an understanding by the public of the history of medicine, its progress and its unsolved problems, all too soon the "practical" politician, without ethical restriction, through political newspaper publicity will garner to himself from an ignorant public the glory due to the men of medicine who today represent a century of progress. The informed men of our free press differentiate between the true and the spurious.

Liberty means responsibility, not license. That is why many men dread it. The love of liberty and truth requires constant vigilance and ceaseless effort. The history of liberty is a history of the limitations of governmental power, not the increase of it. The greatest dangers to liberty lurk in the insidious encroachments by men of zeal, well-meaning and with noble aims but without understanding of ways and means and of basic human nature. The armor of truth of the free man must be vigilantly preserved during these days of war and false propaganda.

The following men wrote on the dangers of war: Samuel Johnson in *The Idler*, November 11, 1758, wrote:

"Among the calamities of war may be justly numbered the diminution of the love of truth by the falsehoods which interest dictates and credulity encourages. A peace will equally leave the warrier and the relator of wars destitute of employment; and I know not whether more is to be dreaded from streets filled with soldiers accustomed to kill and plunder, or from garrets filled with scribblers accustomed to lie."

James A. Garfield, in his speech to the House of Representatives of June 25, 1864, stated, "A nation is not worthy to be saved, if, in the hour of its fate, it will not gather up all of its jewels of manhood and life and go down into the conflict, however bloody and doubtful, resolved on measureless ruin or complete success."

First things must come first. Our immediate task is to win this war, which we will, even though the struggle be long and arduous. Although all of the previous ideals of this nation do not begin to outweigh the single purpose of winning this war, it would be a futile adventure if we found that we were victorious in war and that during peace we had lost our ideals of life, liberty and the pursuit of real happiness. In fact, the Atlantic Charter emphasizes freedom of speech, free-

dom of religion, freedom from want and freedom from fear. The methods of arriving at these ideal goals are absolutely uncharted at the present time. Even though in the pursuit of the victorious war we submit to centralization of authority, rationing of material and regimentation of manpower, we still keep clearly in view our ideals of liberty and the means of attaining it when the calm of peace is regained. This independence during time of peace is absolutely essential for the continued progress of medical education, research and medical care. The province of the physician is to supply adequate leadership in reference to the maintenance and the reestablishment of health in a bewildered and punch drunk world. This is a serious challenge. It will require initiative and courage.

Let us hope for the wisdom of humility fostered by the great unknown still to be discovered by our faith in peace and our science and to avoid the blindly destructive contentions fostered by undue pride, haughtiness, stupid arrogance and craving for personal power. Let us hope for the ability honestly to confer, to consider the opinions of others and to cooperate for the good of humanity. This requires tireless effort if a real blackout of science and human values is not to result as it has in the Axis-controlled countries. Every great military leader admits that war is a stupid, even if it is at times an absolutely necessary act. It is necessary from time to time to incapacitate those who cherish falsehood and to prove that "truth is still mightier than the sword" even though temporary victory goes to those with the largest number of personnel and material and the greatest intensive training in the art of treason, treachery, and deception. It would be the height of human folly, however, to beat our enemies physically and then to succumb to their disastrous and destructive philosophy of human relations.

THE ROBERTSON TEST FOR CARCINOMA

A Preliminary Report*

By W. L. HARDESTY, M. D. and BETTY LOVE
Charleston, West Virginia

According to Robertson's observations,[1] carcinomatous blood clots in vitro, under certain conditions, in carcinomatous urine; whereas noncarcinomatous blood does not thus clot in any urine.

In the hope that the Robertson test will be tried on a large scale under the conditions which its originator prescribes, this report is offered.

TECHNIQUE

Into a curved (emesis) basin place 2.0 cc. or more of fresh lime water, add about 90 cc. of the patient's urine, preferably a morning specimen. This must be clear (filtration may be necessary), and free from bile or blood. By venipuncture obtain about 5 cc. of the patient's blood. Promptly dip the needle into the urine mixture near one end of the basin and forcibly expel the blood towards this nearer end. After five minutes tilt the basin in a seesaw manner; thus the blood mingles with the supernatant urine. Repeat this tilting at intervals of five minutes until twenty minutes have elapsed. Next, pour off all the fluid and examine the basin for clots. If such be present, attempt to dislodge them by a stream of tap water.

THE AUTHORS

Dr. Wm. L. Hardesty, formerly of McMillan Hospital Staff, Charleston, West Virginia; graduate Washington University School of Medicine, St. Louis, Mo.; American Society of Clinical Pathologists.

Miss Betty Love, laboratory technician, McMillan Hospital.

*From the Pathologic Laboratory, McMillan Hospital. (Some of the work was done at St. Francis and Staats Hospitals).

The clots may be stained. First, wash out any excess blood or urine with water. Decolorize with hydrogen peroxide, then stain with a 5 per cent solution of carbolfuchsin.

If in suspected carcinoma the result be negative, calcium should be added. In such a case Robertson[2] recommends the use of the following reagent:

Ammonium oxalate, 2.5 gm.; oxalic acid, 2.5 gm.; glac. acetic acid, 5 cc.; make up to 150 cc. with water.

Use equal (small) parts of this reagent and urine. A normal amount of calcium in the urine will give a faint smokiness, an excess amount, a milkiness. In calcium deficiency the mixture remains clear, and a larger amount of lime water must be employed in the test proper.

Positive reactions are characterized by clots which vary in size from a pinhead to a pea, or by long strips of clotted blood, usually reddish brown. The chief criterion of a positive test is the persistency with which clots cling to the bottom of the basin, despite fairly vigorous washing.

In negative reactions no clots are found, or we find clots which are easily washed away.

In some cases clots, which the worker believes to be moderate, are removable by rinsing. These should be classified as doubtful reactions and such results should be so recorded and the test repeated.

At this point mention should be made of anomalous reactions. Occasionally, in conditions other than carcinoma, the blood-urine mixture forms a gross, jelly-like mass. Reactions of this type should, we believe, be reported as doubtful.

RESULTS IN OUR HANDS

We have tested 75 individuals so far, many of which are not included here because the clinical conditions are not finally established. No case is included as carcinoma or sarcoma without cogent reason, usually histologic proof; no case is included as noncancerous without reason likewise cogent (operation, autopsy or lapse of time).

We have been able with almost absolute certainty to diagnose or to exclude cancer in 46 cases. The others must await final diagnosis.

From the data below it will be seen that positive results have been limited almost entirely to untreated cancer, usually carcinoma. Sarcoma has yielded variable results. In treated carcinoma, in several nonmalignant conditions, and among healthy persons, the results have usually been negative, occasionally doubtful or anomalous.

POSITIVE TESTS

Diagnosis:	Number of Tests
Adenocarcinoma of sigmoid	1
Adenocarcinoma of transverse colon	1
Epithelioma of cervix	1
Carcinoma of pelvis, undifferentiated	1
Melanosarcoma of eye	1
Osteosarcoma of tibia	1
Carcinoma of breast, simplex	1
Carcinoma of breast (Paget's)	1
Myeloid sarcoma of mouth	1
Carcinoma, metastatic (cervical node)	1
Pulmonary tuberculosis, arrested	1
Cystadenoma papilliferum malignum (ovary)	1
TOTAL	12

Accuracy as to malignancy: (11/12), 91.6 per cent.

DOUBTFUL AND ANOMALOUS RESULTS

Diagnosis:	Number of Tests	Remarks
Periportal cirrhosis	1	Clotting en masse
Melanosarcoma of leg (untreated)	1	Clots easily dislodged
Adenocarcinoma of stomach*	1	Questionable (tiny) clots
Leukemia, lymphoid	1	Clots easily dislodged
Fatty liver (alcoholism)	1	Clotting en masse
Alcoholism, chronic	1	Clots easily dislodged
Cystadenoma papilliferum benignum	1	Questionable clots
Pulmonary tuberculosis	1	Clotting en masse
TOTAL	8	

NEGATIVE RESULTS (Total=26)

(Figures in parentheses indicate the number of cases for each condition).

Treated carcinoma: medullary, of breast, O., R.,* 2 years,* (1); simplex, of breast, O., 2 weeks, (1).

Untreated carcinoma: adenocarcinoma of stomach (1); epithelioma of cervix, less than 24 hours postoperative (2).

Sarcoma, osteogenic (2).

Endothelioma of foot (1).

Diabetes and atherosclerosis (1); cholecystitis and fibrosis uteri (1); cholecystitis (4).

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* Test made one week after operation.

*O=Operation; R=Radiation; Years or Weeks=years or weeks clinically well since treatment.

Cataract, senile (1); glossitis (1); syphilis, tertiary (2).

Cystadenoma papilliferum benignum (1); gestation (2); pelvic inflammatory disease, chronic, with prolapse (1).

Healthy persons (4).

SUMMARY

Treated carcinoma	2
Untreated carcinoma	3
Sarcoma and endothelioma	3
Total of malignant cases	8
Nonmalignant cases	18
Total cases giving negative results	26

Accuracy as to nonmalignancy (18/26), 69.2 per cent.

Accuracy as to untreated carcinoma (23/26), 88.4 per cent.

In justice it should be stated that some of these tests were performed before Robertson introduced the practice of adding more lime water when the urine is deficient in calcium.

SUGGESTED CRITERIA

For eventual evaluation of the test, we would suggest the following criteria:

1. It should be performed on many thousands of individuals in the "cancer age", representing the greatest possible variety of conditions, malignant and benign.

2. Diagnosis, of course, must rest entirely on evidence other than that of the test itself.

3. No case should be recorded—in such research—as cancerous without strong proof, preferably both clinical and pathologic, nor any case as noncancerous until at least a year has elapsed after the test.

In addition we may hope that results will be recorded as "positive", "doubtful" or "negative." The traditional 1, 2, 3 or 4 "plus" reports, which in the serosyphilis tests have confused and misled physicians for a generation and are now being abandoned, render pathologists reluctant to employ such pseudoquantitation in a new test.

CONCLUSIONS

Results with the Robertson carcinoma test on 46 thoroughly studied patients are reported here. So far, in our hands, the test has been usually positive in carcinoma, negative or doubtful in conditions not malignant and variable in sarcoma.

These results, in substantial agreement with Robertson's,[1] warrant, we believe, serious and widespread study of the test.

REFERENCES

1. Robertson, F. N.: *Investigation Into Some Points With Regard to Cancer;* Bull. Vancouver Med. Ass'n., XVI; 10, P. 107 (July) 1940.

2. 3 Idem: Personal Communications.

Aggressive Health Education Needed

We justly feel proud of increasing the span of life from forty years in 1900 to sixty-two in 1940. An analysis of these figures shows that the gain after 50 years is only 9 months. Diseases of the circulatory system account for three or four times as many deaths after 50 years of age as all other causes combined.

Diseases of the coronary arteries with few exceptions, are the cause of heart disease after 50 years of age, arteriosclerosis being the chief factor, either as a primary disease or associated with hypertension.

This field of medical investigation remains virgin soil. No important contributions have yet been made as to etiology, treatment or management.

Progress undoubtedly will come through the efforts of individuals for the benefit of their own personal health. The seeds of this knowledge will have to be planted by the pediatrists. Aggressive health education will have to be instilled in the grade schools. Perhaps this will be more concerned with human motives than medical facts.—Frederick W. Niehaus in *Nebraska State Medical Journal.*

Hands Unimportant in Spread of "Flu"

Discovery that the influenza viruses type A and type B die in a few minutes if put on human skin, such as the palm of the hand, and allowed to dry there, has been announced by Commander Albert Paul Krueger, in command of Naval Laboratory Research Unit No. 1 at the University of California.

"These results," said Commander Krueger, "emphasize again the importance of tiny virus-containing droplets sprayed into the air when one sneezes, coughs or even talks vigorously, as a means of spreading influenza. Hand to hand distribution of the virus and eventual hand to mouth transfer would appear to be unimportant hazards."—*Science News Letter.*

THE NEWER ALLOYS IN SURGERY*

By CHARLES S. VENABLE, M.D. and WALTER G. STUCK, M.D.
San Antonio, Texas

As long as surgery has been practiced metal appliances have been developed which could serve as strong, rigid supports for the tissues. A list of the better known appliances will give some idea of the diversity of this use of metals: Petronius—1565—gold plate for cleft palate; Lapeyode and Sicre—1775—iron wire in fractures; Kearney Rodgers—1826—silver wire in fractures; Malgaigne—1840—iron fracture hooks; von Langenbeck—1878—metal nail for fractured hip; Lister—1883—iron wire in fractures; Estes—1887—steel plates for fractures; White—1892—removable bone plate of steel; Murphy—1892—iron button for intestinal anastomosis; Thiriar — 1894 — aluminum bone plate; Lane—1897—silvered steel bone screws; Streinach—1900—silver bone plate; Payr—1901—magnesium tube for intestinal anastomosis; Lambotte—1902—brass bone plates and screws; Murphy—1906—iron wire for fractures; Babcock—1934—alloy steel wire for sutures; Moore—1864—gold and platinum wire sutures; Huse—1878—magnesium wire sutures; Babcock—1928—aluminum bronze wire for fractures; Booth and Curtis—1893—aluminum skull plate; Halstead—aluminum clips for blood vessels; Harrington and Gould—aluminum ring for intestinal anastomosis; Andrews—1917—magnesium clips for blood vessels.

However, until recently, whenever metals were buried in the tissues it was a common observation that some metals "irritated" tissues more than others and that very few were tolerated in the body without producing collections of fluid, dense scarring, or sinus formation. These phenomena were not clearly understood and surgeons therefore changed to the new industrial alloys to see if they would be more suitable or less irritating in the body.

THE AUTHORS

Dr. Walter G. Stuck, graduate Washington University, 1929; interned University of Michigan Hospital; Fellow in Orthopedic Surgery, Mayo Clinic, 1930-1934; M. S., Orthopedic Surgery, University of Minnesota, 1934.

Dr. Charles S. Venable, graduate University of Virginia Department of Medicine; American Board of Surgery; Southern Surgical Association; American Association for the Surgery of Trauma; Fellow American College of Surgeons.

In the past few years it has become known that most metals are affected in the body fluids by galvanic action of the ions of the metals and that this electrolysis is the cause of tissue destruction and the other unfavorable reactions. Therefore, since this has been understood surgeons have been provided with a means of determining suitability of metals for use in the body.

Previously it was observed that pure metals caused little tissue reaction. As a consequence gold, platinum, and silver were widely used in surgery. They were too soft, however, to serve as nails, clamps, or screws so other metals were alloyed with them to give strength. This, unfortunately, brought dissimilar metals together which caused a galvanic action that was destructive to tissue.

The next step was to try silver or nickel-plated appliances of steel so that they would have the strength of steel with the resistance to fluids of the plating metal. This method failed generally because no plating was found that proved to be perfect and cracks appeared which allowed body fluids to come in contact with the two dissimilar metals.

*Abstract of presentation before Kanawha County Medical Society, October 13, 1942.

Again a "battery action" was created which destroyed adjacent tissue.

As other metals came into general use, such as aluminum, magnesium, aluminum bronze, and copper alloys, surgical appliances were made of them and tried in the body. Some of these, such as aluminum and magnesium, were pure metals and therefore were not subject to galvanic action but they were oxidized and corroded by the chemical action of the body fluids so that they likewise failed to meet the requirements.

In the last twenty years, many steel alloys have been developed in industry such as chrome steel, vanadium steel, and various types of stainless or rustless steel and these likewise have been adapted to surgery. While they were strong and durable and resisted oxidation from exposure to weather they were unable to resist the effects of blood serum in the body. All these steels were alloys of iron, nickel, chromium, or vanadium and the combined metals were subject to electrolytic disintegration when exposed to normal serum. Iron and the combined metals initiated a current which eroded bone, set up a "foreign body reaction" in the soft tissues, and caused disintegration of the metal itself.

Three modern industrial metals have been found to produce very little electrolytic reaction in body fluids and they are being studied by the Fracture Committee of the American College of Surgeons to determine their passivity and suitability for use in the body.

Vitallium, an alloy of cobalt, chromium, and molybdenum, is inert or passive in body fluids and there is no measurable current produced by it. After experimenting with it in animals we introduced it into surgery in 1936 and in the past six years it has been found to be widely adaptable for various types of surgical appliances.

18-8-SMO stainless steel is a new alloy of iron and 18 per cent nickel, 8 per cent chromium and 2 to 3 per cent molybdenum. It is much more nearly passive or inert than all the other steels such as "18-8" steel, chrome steel, or vanadium steel. It is not as inert as vitallium, however, and is suitable for use in the body only as relatively small appliances.

Tantalum, which is a basic element, was studied by Burke of Vancouver and Burch and Carney of Vanderbilt University and found to be neutral in body fluids and free of chemical changes as well. Since it is an element and contains only one metal there is no electrolytic action about it. Because of difficulties in manufacture it is available only as wire thus far. Later, as other appliances are made of tantalum they may be found to be ideal for surgical use.

New industrial alloys are being constantly developed for the rapidly changing problems of manufacture. This process is greatly accelerated by the war demands for strong, light materials for aeroplanes, durable alloys for ships and guns, and alloys which do not require rare or unobtainable metals. In this development, undoubtedly some alloy may be found which is perfectly suited to all the requirements of metals in surgery. An essential attribute, nevertheless, is that the alloy must produce no electrolytic action in body fluids or be subject to galvanic phenomena. A great step forward in the standardization of nonelectrolytic metals for surgical appliances is the work of the Fracture Committee of the American College of Surgeons. This group has set up standards of passivity and strength which must be met by the new alloys if they are to be used safely in the body.

BIBLIOGRAPHY

Venable, C. S. and Stuck, W. G.:

The Effects on Bone of the Presence of Metals: Ann. Surg., 105, 917, 1937

Electrolytic Destruction of Bone Caused by Metal Fixation Devices; Jour. Bone and Joint Surg., 19, 1077, 1937.

Recent Advances in Fracture Treatment With Non-Electrolytic Metal Appliances; Jour. Ind. State Med. Assn., 31, 335, 1938.

Electrolysis Controlling Factor in the Use of Metals in Treating Fractures; J. A. M. A. 111-134, 1938.

Vitallium Nails in Fractures of the Hip; S. G. O., 70, 964, 1940.

The Use of Vitallium Appliances in Compound Fractures; Am. J. Surg., 51, 757, 1941.

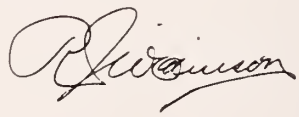
Three Years' Experience With Vitallium in Bone Surgery; Ann. Surg., 114, 309, 1941.

The President's Page

The medical profession is on trial and if we are to emerge victorious in our battle against regimentation it must be done through an educational program, for little does the public realize the evils of government medicine. When the committee in whose hands we have entrusted the future planning for our State Association agrees upon a program, I sincerely trust they will not overlook the potential strength of the members of the Woman's Auxiliary, for they are willing and anxious to be of service. Where can be found a more devoted ally than the physician's wife? Let's give them a chance to help us.

The 76th annual meeting of the West Virginia State Medical Association will be held at the Daniel Boone Hotel, Charleston, May 17-18. Due to war conditions, this meeting will be streamlined. All formal entertainment will be curtailed. In fact, it will be an intensive two-day postgraduate course. As a prelude to the general session, which opens Monday morning at nine-thirty o'clock, the Scientific Committee has arranged a public meeting for Sunday night, with Sister Kenny as the speaker. This distinguished woman needs no introduction to an American audience, for we all know something of the great work she is doing for the poliomyelitis cases.

Why not plan now to spend part of your vacation at Charleston? While obtaining a needed rest and change, you will be privileged to hear men of national reputation speak on current medical subjects. I hope to have the pleasure of seeing you at the annual meeting in May.



West Virginia Medical Journal

Official Journal of
The West Virginia State Medical Association
302 Atlas Bldg., Charleston, West Va.

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Published monthly on the first day of the month, at Charleston, by The West Virginia State Medical Association.

Original articles are accepted on condition that they are contributed exclusively to the Journal.

Advertising rates furnished upon request. All advertisements must conform to the standard established by the Council of Pharmacy and Chemistry of the American Medical Association.

Address all communications to Business Manager, West Virginia Medical Journal, Box 1031, Charleston, West Va. Phone, Capitol 34-625.

SUBSCRIPTION $3.50 PER YEAR

Entered as second-class matter, January 1, 1926. Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917. Authorized July 24, 1919.

1867-1943

The West Virginia State Medical Association was born 76 years ago, two years after the close of the Civil War. From a mere handful of physicians in 1867, the organization has expanded year by year until now the membership exceeds 1,300 physicians from every section of West Virginia.

Practice in 1867 was confined almost wholly to the home. Rare indeed was the occasion when a patient was removed to a hospital. Those who lived in urban areas could take advantage of the facilities offered by hospitals, but in the smaller towns and rural areas the patient depended wholly upon the family doctor. Today, hospitals are to be found in even the smallest towns of the state and doctors everywhere can take advantage of the facilities offered by modern medicine for the treatment of their patients.

Amazing discoveries during the past 20, 10, even 5 years have helped to lengthen man's expectancy of life far beyond what was thought to be the maximum 76 years ago. The next 20 years will be most interesting to watch. Men of medicine the world over are working day and night to solve mysteries that still exist concerning the cause and cure of disease. Discoveries of the greatest interest to mankind are being announced ever so often. Additional uses for sulfa drugs are being found frequently. What discoveries lie ahead? Fortunate indeed are we who live in this great age. There will always be something new under the sun, and we predict with confidence that the present generation will witness the greatest number of discoveries of science and medicine ever announced during any previous short period of years.

We look to the future, almost the immediate future, for the solution of problems that still baffle the medical profession. There is an answer for polio, cancer, and all the virus diseases. We expect that answer long before another 76 years have come and gone.

A "MUST" DATE

The big month of the year for doctors is here, the month in which the annual meeting of the West Virginia State Medical Association will be held. The occasion is of much greater significance this year than ever before. Doctors are just not taking a vacation. There seems to be no time for rest or relaxation. Greater demands are being made upon their time than at any time during their professional career. The shortage of doctors in certain areas means that those still in active practice at home must remain on the job month after month, year after year, until the war is over.

For the purpose of meeting this situation, the Scientific Work Committee has arranged a program for the convention at Charleston, May 17-18, that will appeal to the general practitioner as well as to the specialist. It is one of the best programs ever offered at an annual meeting. A three-day program has been crowded into two days so that doctors will not have to remain away from home for too long a period of time. The speakers selected are men at the very top of their profession in this country.

Doctors must have postgraduate work if they are to keep in step with the times. The two-day program provides for a postgraduate course in itself. All doctors are urged to go over the program carefully. Practically all branches of medicine and surgery are represented. No effort should be spared by doctors to arrange to attend all of these sessions.

The annual meeting will be opened Sunday evening, May 16, with an address by Sister Elizabeth Kenny at the Shrine Mosque, in Charleston. On account of the great interest being manifested in Sister Kenny's visit to this state, this meeting will be open to the public. All members of the Association are urged to be in Charleston by early evening on Sunday, May 16. Sister Kenny's address is scheduled for 9 o'clock.

PRIMARY ATYPICAL PNEUMONIA

While "virus pneumonia" has been known for a long time, very recently there has been a marked increase in the incidence of a lung inflammation which is probably a virus pneumonitis. Several good articles on this subject have recently appeared and the disease is well described. However, one feature not emphasized which we have noted in a goodly number of our cases has been the marked and somewhat prolonged prostration following the febrile period. One of the best brief descriptions we have seen is in an editorial in *The Journal of the South Carolina Medical Association* under the title "Acute Primary Pneumonia." We quote:

"During the past year there has been an increasing number of victims—at first in military centers and now among the civilian populace—of this so-called 'new disease.' It presents a relatively clear cut picture which has been well described by various writers. Clinically, it is characterized by a sudden onset, fever, headache, a rather distressing cough, a bradycardia, and an absence of physical signs in the lungs during the first few days. The leucocyte count ranges from a leucopenia to a mild leucocytosis with a normal differential count. The diagnosis is made by x-ray which shows a feathery shadow extending from the hilum into one or more lobes of the lung. Unaltered by any of the sulfonamides, the fever runs its course (five to fifteen days) and clears by lysis. Complications are rare and the outlook for complete recovery is excellent.

"Such is a thumbnail sketch of a condition which has been recognized only recently as a definite clinical entity. Various names have been used to describe it—virus pneumonia, acute pneumonitis, acute interstitial pneumonitis, circumscribed pneumonia, disseminated focal pneumonia.

"The Surgeons General of the Army and Navy have adopted the name—acute primary pneumonia of undetermined origin, and this is the title which will probably prevail until a more accurate designation is made.

"So far, no etiological agent has been indicated. Most workers seem to believe that some virus is guilty, but the virus has not been isolated. Furthermore, there does not seem to be any connection between this acute primary pneumonia and the influenza viruses now recognized. In spite of this, however, there are many of us who have only seen the condition from a clinical standpoint who agree with Henry Christian, as he writes in the newest edition of *Osler's Principles and Practice of Medicine*:

" 'Reading between the lines of the reporters of groups of these patients, the author of this volume senses in them the same sensations that he had in 1918 when suddenly confronted with numerous patients with a respiratory disease that he never before had seen, the feeling that he was dealing with a disease new to him, and which he must compare speedily with descriptions of past observers. To them came the conclusion that a new respiratory disease had appeared. The experience of 1918, compared with that of the present, leaves this author with the feeling that the clinical descriptions of today agree with those he made of many cases in 1918, although the pathological lesions in the few fatal cases and the etiology and period between contact and onset of the present disease differ; all of this suggests to him that clinically this new disease is a variant of the 1918 influenza, capable, were it to assume pandemic proportions, of clinical identity with pandemic influenza.' "

As the South Carolina editor observes, many cases of this disease have been seen in the armed forces. A year ago the Medical Department of the United States Army adopted the term "primary atypical pneu-

monia, etiology unknown," so that the disease might be differentiated from other kinds of pneumonia. An army commission which has studied the respiratory diseases seen at Camp Claiborne, La., has issued a report which is published in the current issue of *War Medicine*.

"On the basis of the present investigations," the report says, "it seems most likely that a new agent, probably a virus, is responsible for atypical pneumonia. The studies now in progress are suggestive but do not yet warrant any definite conclusion.

"At the present time no specific control measures are available. No evidence was obtained that predisposing factors, such as chilling, fatigue or previous infections of the upper respiratory tract, were important in the pathogenesis of the disease.

"The experience of the past few years has made it increasingly apparent that atypical pneumonia is a common illness affecting the respiratory tract which is frequently unrecognized. The full extent of its prevalence is probably not realized."

The investigation by the commission was made under the direction of the Board for the Investigation and Control of Influenza and Other Epidemic Diseases in the United States Army, Preventive Medicine Division, Office of the Surgeon General, United States Army. The report points out that "The characteristics of atypical pneumonia were those of a mild to moderately severe illness of gradual onset in which constitutional symptoms predominated over symptoms referable to the respiratory tract in the early stages. * * * The illness persisted for five to fourteen days and was not influenced by chemotherapy. Complications were extremely rare and the prognosis was excellent.

"A history of exposure to cold and dampness before the onset was encountered in 42 per cent of the cases; in 35 per cent of cases the patients gave a history suggesting a preceding infection of the upper respiratory tract. There was no consistent history of insect bites or of contact with birds or animals. * * *

"The onset of illness was gradual over a period of one to two days in the majority of instances. The constitutional symptoms of fever, headache, malaise and chilliness without rigor were present in more than three-fourths of the cases. Dry and paroxysmal cough was an almost constant complaint early in the course of the disease; it was productive by the time of admission in approximately two-thirds of the cases. * * *

"Coryza occurred in only 28 cases, or 41 per cent, by the time of admission and sore throat in about one-third. * * * In the great majority of cases the patients on admission were mildly or moderately ill, and prostration was rare. * * *"

There was a wide variation in the fever response to the disease, some patients having no fever at any time during the hospital stay but the majority of them had a fever course of at least six days, which was in sharp contrast to the course of patients with regular pneumonia when treated with sulfonamide compounds. Also in contrast to regular pneumonia the pulse and respiratory rates were only slightly elevated in those with atypical pneumonia and labored breathing was rarely encountered.

Great variability was observed in the duration of the acute illness. The shortest illness recorded was two days and the longest forty-five days; in the greatest number of cases the illness lasted seven days. The average stay at the hospital for patients with atypical pneumonia was 31.7 days. Complications were infrequent. Only one death occurred in the 285 cases under investigation.

No specific form of treatment was found effective. Complete rest in bed, a liberal intake of fluids and an easily digestible diet were given during the fever period.

The findings by the commission suggest the possibility that the disease has a long incubation period and there was a limited amount of evidence indicating that under conditions of frequent exposure the disease was transmissible from patient to patient by contact. Unrecognized and inapparent infections probably exist and may constitute the effective source of spread of the disease. Some slight evidence for the presence of an unidentified agent of the cause of the disease has been obtained, the commission reports, but to date this agent has not been positively identified.

In summarizing its findings the commission says that they emphasize the need for early and repeated x-ray examination and for frequent physical examination during the course of the acute illness because only by such methods can the true incidence of atypical pneumonia be determined. The wide occurrence of cases at the camp and the small proportion of the population affected suggest that susceptibility to the pneumonic form of the disease was low.

In the same issue of *War Medicine* Major Edgar

T. Campbell, Medical Corps, United States Army, points out that primary atypical pneumonia is frequently associated with malaria in regions where the latter disease is endemic or prevalent. He says that both diseases, when present, run their independent courses concurrently, with little effect on the eventual recovery of the patient. He also declares that the diagnosis of the disease must be made by x-ray examination.

In our own experience, the x-ray has been indispensable in diagnosis, especially in the milder cases showing small areas of involvement.

A SECOND S. O. S.

Notwithstanding a generous response by members of the West Virginia State Medical Association to an S. O. S. for scientific papers, printed in the February issue of the JOURNAL, there is still an urgent need for material of this character.

We know that many of our members are capable of preparing papers that will be of interest to the profession. It is hoped that such members will cooperate to the fullest extent at this time when material is so badly needed for the JOURNAL.

Secretaries of component societies are again urged to submit for publication interesting and worthwhile papers presented before their local societies. Papers accepted for publication must be original and must not have been previously published in any medical journal.

NINE DAYS FROM HOME

A letter was received April 17 at the headquarters office of the West Virginia State Medical Association that had been mailed in New Caledonia, "way down under," in the South Pacific, on April 8. The letter was from a West Virginia doctor now in active service with our troops in that area. It had been sent by air mail.

Just a few years ago, New Caledonia was weeks, months, away from home. Today it is a matter of but a few days. It is literally at our back door.

The world is small indeed. West Virginia doctors are in the four corners of the earth. They sail the seven seas, and still they are just a few hours away from home. Almost day to day the distance from one part of the earth to the other grows less. It is easy enough to see how, after the war, it will be just another of those things to have breakfast at home and dinner somewhere on the continent of Europe.

EDUCATIONAL TRAIL BLAZING

The act of the recent legislative session empowering the West Virginia University to contract with out-of-state medical schools to give the third and fourth years of the medical course to those West Virginians who have completed the first two years of the medical curriculum at Morgantown represents definite educational pioneering, and is exciting comment generally.

While the plan was being discussed with the Council on Medical Education and Hospitals of the American Medical Association, one member of that body exclaimed: "If all the two-year schools could perfect such an arrangement, what a boon it would be."

Probably no man living is more familiar with the educational needs and problems of the south than is Mr. Jackson Davis, Associate Director of the General Education Board. In a personal communication, Mr. Davis writes us:

"Word has just reached me that the Legislature of West Virginia has authorized and approved the plan of cooperation of the Medical School in making arrangements for the two senior years at some institution outside the State. As I understand it this means that the plan will be consummated with the Medical College of Virginia. To my mind this is one of the most significant steps taken in recent years in education in the south. It sets a pattern which points the way to do high grade work with limited resources through institutional collaboration."

One of the most significant lay editorials we have seen appeared in the *Richmond Times-Dispatch* for March 24 under the title: "Pattern for the South and the Nation." The editorial is unsigned, but from its style, we would assume that it is from the pen of Mr. Virginius Dabney, the gifted editor of the *Times-Dispatch*. While the inference that South Carolina does not have a satisfactory medical school is erroneous, the whole spirit of the editorial is so true and the argument set forth is so valid and so apropos, that we reproduce it in its entirety:

"The arrangement whereby the West Virginia Legislature is appropriating funds to permit the State University there to send students to the Medical College of Virginia for third and fourth year medical training, probably is one of the most far-reaching developments that has occurred in the field of American higher education. It should lead to similar action on the part of many other States, and to the development of regional centers for graduate and professional instruction, thus supplanting the often poorly financed and inadequate institutions which some States have been endeavoring to maintain.

"Both white and colored centers of higher learning can profit by this example. The South, which is far less wealthy per capita than the more thickly settled and more heavily developed industrial areas of the country, stands to gain more than any other region by such an arrangement. It should be particularly helpful, too, to the sparsely settled areas of the West, as well as to parts of New England.

"Precisely which institutions ought to be brought into cooperative ventures of this character is a problem for experts in the field. The pattern now has been set by the West Virginia Legislature and the Medical College here. They have demonstrated that the plan is practical, and that it benefits both contracting parties. It now remains for the specialists to point out means of carrying the process further.

"The South has several States with few, if any, graduate and professional facilities of a high caliber. No Ph.D degree is obtainable, for example, in Alabama, Arkansas, Mississippi or South Carolina. The Deep South has not a single university which has been deemed worthy of membership in the Association of American Universities. There are several excellent medical schools in the South, but none at all in some Southern States. Engineering schools of the first rank are scattered here and there, with wide gaps between.

"Isn't it obvious that the States should pool their resources, as West Virginia and Virginia have just done, to the end that the best grade of instruction may be made available to the youth of the whole region? For instance, the splendid advanced engineering instruction at Virginia Polytechnic Institute could be made available to the engineering students of Tennessee, who have no comparable institution there. South Carolina might make an arrangement with the Duke University Medical School, whereby South Carolinians could attend it, or with Emory University Medical School in Atlanta. Mississippi could form a cooperative arrangement with the Vanderbilt Medical School, or with either Tulane or Louisiana State.

"In the field of higher education for Negroes, the possibilities are even greater, for most of the institutions now maintained in the various Southern States are obviously inadequate. Strong regional centers for graduate and professional training for colored men and women might well be established in Atlanta and Nashville, for example, which already have the nuclei for such institutions, and at such centers as Hampton and Tuskegee. A congressional enabling act apparently would be required to make consolidations of Negro institutions on a regional basis possible.

"In these days of mounting taxes and staggering expenditures for war, and its aftermath, anything which will promise relief to taxpayers, and at the same time, provide more effective services to the public, ought to be seized upon. The Medical College of Virginia and the West Virginia Legislature have shown the way It is to be hoped that their example will be followed on a major scale."

* * *

Since the above editorial was written, *Newsweek* (April 12, 1943) under "Education," discusses at some length Mr. Dabney's editorial and the plan as adopted. *Newsweek* gives Mr. Dabney credit for proposing the plan in "Below the Potomac" one year ago. Just as a matter of keeping the record straight, the original proposal of this particular plan was made by the Committee on Medical Education of the West Virginia

State Medical Association in 1941. Dr. R. J. Wilkinson, now president of the West Virginia State Medical Association, was Chairman of the Committee and Dr. Frank V. Langfitt, of Clarksburg, and Dean Van Liere, of the West Virginia University Medical School, were the other members. This Committee after much study reported to the Council of the West Virginia State Medical Association in May, 1941, essentially the plan which has been adopted. Otherwise *Newsweek's* article is a good discussion of the plan and of educational conditions in the South generally.

The plan as adopted was not made public until August, 1942, some months after the appearance of "Below the Potomac." After Dr. Wilkinson, who is generally credited by the profession in this state as being the one who actually first suggested such an arrangement, had presented the report of his Committee to the Council at the May (1941) meeting in Charleston, the Publication Committee was instructed by the Council not to publish this feature until the plan could be further discussed and perfected. Inasmuch as "Below the Potomac" was published early in 1942, Mr. Dabney is entitled to priority of publication of the idea, but the plan as adopted is almost exactly as was presented by Dr. Wilkinson in May, 1941.

DR. HOGE AND DR. WADDELL

The members of the West Virginia State Medical Association have suffered the loss of two past presidents by death since the last issue of the JOURNAL. Dr. C. W. Waddell, of Fairmont, president in 1938, died March 29, after a long illness. Dr. Albert H. Hoge, of Bluefield, president in 1932, died April 8, following a heart attack.

In the passing of these two prominent West Virginians, the medical profession has suffered an irreparable loss. Both had attained high places in their home communities. They both possessed those traits of warm human understanding, integrity, and self-sacrifice that endear one to his fellowman. The fruits of their labors will live on as monuments to their beloved memory, and we join their families and associates in mourning their untimely passing.

UTILIZING OVERLAPPING INTERNSHIPS

An example of how every available man-hour of medical personnel is being utilized to meet the medical problems resulting from the war is contained in an announcement by the Procurement and Assignment Service for Physicians, Dentists and Veterinarians, of the War Manpower Commission, on the utilization of overlapping internships, published in *The Journal of the American Medical Association* for March 27. The announcement says:

The directing board of the Procurement and Assignment Service has informed its state chairmen that consideration should be given to overlapping internships resulting from the nine months school year and has suggested that state chairmen should serve as a clearing house between hospitals with such overlapping internships and institutions requiring additional personnel.

Nearly all medical schools now have a graduating class each nine months. A full year internship now is required by Army and Navy regulations, by many state boards and, in some instances, by medical schools. In March and April new groups of interns are entering hospitals for their internships with interns from last year still having three or more months left to complete their required service.

It is the consensus of organizations concerned, sitting with representatives of the three surgeon generals and of Selective Service, that there would be no objection to utilizing these overlapping internships elsewhere, such as in approved hospitals without adequate personnel, if the hospital in which the first part of the internship was served will certify to a full year's service. This opinion was concurred in by representatives of the Council on Medical Education and Hospitals of the American Medical Association, the Advisory Board for Medical Specialties, the Federation of State Medical Boards, the American Hospital Association, the American College of Surgeons, the Protestant Hospital Association, the Catholic Hospital Association and the Association of American Medical Colleges.

Obituaries

ALBERT H. HOGE, M. D.

Dr. Albert Hammond Hoge, of Bluefield, was born in Giles County, Virginia, August 17, 1885. He graduated at the Medical College of Virginia, Richmond, in 1908. He interned at St. Luke's Hospital, Richmond, and then located for the practice of his profession at Bluefield. During World War I, Dr. Hoge served in the Medical Corps of the United States Army. He was a Fellow of the American College of Physicians and a Diplomate of the American Board of Internal Medicine, having served as Governor of the former organization for West Virginia in 1939.

DR. ALBERT H. HOGE

Dr. Hoge was a member of the staff and part owner of St. Luke's Hospital, Bluefield. He was a member of the Public Health Council of West Virginia from 1930 to 1942. He was always active in the affairs of the West Virginia State Medical Association for many years, and served as president in 1932.

Dr. Hoge died suddenly of a heart attack April 8 at his home in Bluefield. Funeral services were held at Bluefield, April 10.

CHARLES W. WADDELL, M. D.

Dr. Charles Walter Waddell, of Fairmont, died at his home in that city March 29, 1943, after a long illness.

Dr. Waddell was born at Clifton Mills, Preston County, West Virginia, on November 24, 1887; A. B., West Virginia University, 1900; M. D., cum laude, Harvard Medical School, 1907.

DR. CHARLES W. WADDELL

Dr. Waddell had been a member of the Marion County Medical Society and the West Virginia State Medical Association continuously since 1907. During this time he served as both president and treasurer of the local society and as councillor from the First District. He was president of the West Virginia State Medical Association in 1938.

He had served as medical examiner for the State Compensation Commission since 1916, and was a member of the Advisory Board for the Department of Public Assistance at the time of his death. He was a Fellow of the American College of Physicians and a Diplomate of the American Board.

Dr. Waddell is survived by his widow and three children, Mrs. Lloyd E. Sample, Jr., Mrs. John R. Thomas, and Sarah Jane Waddell.

J. E. BARROWS, M. D.

Dr. J. E. Barrows, of Parkersburg, died February 18, 1943, at his home in that city after an illness of three months.

Dr. Barrows was born near Coolville, Athens County, Ohio, July 22, 1859. He graduated at Starling Medical College, Columbus. He was active in the practice of medicine for nearly half a century, being located at Tuppers Plains, Ohio, and Ravenswood, West Virginia, before moving to Parkersburg in 1926.

He was an honorary member of Parkersburg Academy of Medicine and the West Virginia State Medical Association, and a member of the American Medical Association.

He is survived by his widow, two sons, two grandchildren and three brothers.

Funeral services were conducted February 21, at St. Andrew's Methodist Church, Parkersburg. The body was interred in the Odd Fellows Cemetery at Parkersburg.

R. R. SISSON, M. D.

Dr. R. R. Sisson, of Kitzmiller, Maryland, was born in 1899 in Bedford County, Virginia; graduated at William and Mary College and Medical College of Virginia; interned, 1929, at Charleston General Hospital, Charleston; licensed to practice medicine in West Virginia in 1930. Member of Potomac Valley Medical Society, Southern Medical Association, American Medical Association, Maryland State Medical Association, Garrett Medical Society and West Virginia State Medical Association.

Dr. Sisson died suddenly at his residence Sunday morning, February 21, 1943. The body was interred at Louisa, Kentucky. His widow survives.

JESSE A. WORK, M. D.

Dr. Jesse Adolphus Work, of Blue Creek, Kanawha County, was born at McConnellsville, Ohio, February 4, 1870. He graduated at the College of Physicians and Surgeons, Baltimore, in 1898, and located for the practice of his profession at Copenhaver, moving two years later to Frame, where he practiced for the next several years. He had been engaged in practice at Blue Creek since 1911.

Dr. Work died April 8, at his home, a few hours after suffering a heart attack. He was active in practice up to the time of his death.

He is survived by his widow, one son, Dr. W. F. Work, of Charleston, and two daughters, Mrs. Julia Riddle, and Miss Mildred Work.

Funeral services were held at his home April 10, and the body was interred in Sunset Memorial Park.

AN APPEAL

We are sincere in stating that we feel that the members of the West Virginia State Medical (and Nursing) Associations are to be congratulated in responding so quickly and willingly to their country's call during 1942.

We fully appreciate the difficulties experienced by the faithful few physicians who man the home front. We realize that, with depleted nursing staffs, you have assumed many additional duties. However, because you have always been generous in aiding us to solve our problems, we are soliciting your continued support in influencing and helping us to assist the interested high school graduates into the larger approved schools of nursing in this (or any other) state during 1943 and the younger registered nurses into the military services.

We also solicit the paid services of your nurse wives on a part-time basis on our hospital nursing staffs. And may we state that now as always we pledge you our support and cooperation that West Virginia through our Associations may adequately care for both her military and civilian populations.

W. Va. State Nurses' Association,
47 Capital City Building,
Charleston, West Virginia.

STATE MEDICAL MEETINGS

The following is a list of annual meetings scheduled by state medical associations and societies for the month of May, 1943:

Date	*State*	*Place*
May 3-6	New York	Buffalo
May 3-6	Texas	Forth Worth
May 10-11	North Dakota	Bismarck
May 10-12	N. Carolina	Raleigh
May 11	New Hampshire	Manchester
May 11-12	Oklahoma	Oklahoma City
May 11-13	Mississippi	Jackson
May 17-18	**West Virginia**	**Charleston**
May 17-19	Minnesota	Minneapolis
May 18-20	Illinois	Chicago
May 24-26	Massachusetts	Boston
May 25-26	New Jersey	Trenton
May 25-27	Connecticut	New Haven

General News

PROGRAM COMPLETED FOR ANNUAL MEETING IN CHARLESTON, MAY 17-18

The 76th annual meeting of the West Virginia State Medical Association will get under way at Charleston, Sunday, May 16, with an address by Sister Elizabeth Kenny, of Minneapolis, at the Shrine Mosque. The address is scheduled for 9 o'clock, and the meeting will be open to the public. Brig. Gen. Fred W. Rankin, M. C., President of the American Medical Association, will speak Tuesday evening, May 18.

At 7:30 o'clock Sunday evening a reception in honor of Sister Kenny will be held at the Daniel Boone Hotel, with the Woman's Auxiliary to the West Virginia State Medical Association as hostess.

BRIG. GEN. FRED W. RANKIN

Sister Kenny will spend three days in Charleston, and besides addressing the public meeting, will appear before the convention and will probably conduct one or two clinics on her method of treating poliomyelitis. On Monday, May 17, she will visit Morris Memorial Hospital, at Milton, where she will be the honor guest of the hospital at a luncheon.

The complete program, which appears in this issue of the Journal, embraces a series of scientific sessions covering two full days. The speakers are men of outstanding ability and accomplishments in the fields of medicine and surgery. The program was arranged by the Scientific Work Committee, composed of Dr. O. B. Biern, Huntington, Chairman, and Drs. W. W. Point, Charleston, and C. O. Post, Clarksburg.

Start on Time

It is necessary, on account of the full program provided for the two-day meeting, that all sessions start and end promptly on time. The luncheons will be served at the time indicated in order that those who attend may return to the ballroom in time for the beginning of the afternoon sessions.

No Discussion

Lack of time has necessitated the elimination of the usual period of discussion following the presentation of papers. Instead, there will be a question and answer period of several minutes, with the guest speaker in charge.

Registration

The registration desk will be opened on the mezzanine floor of the Daniel Boone Hotel at three o'clock Sunday afternoon. Doctors are urged to register promptly upon their arrival in Charleston. There will be no registration fee.

Pre-Convention Meeting of Council

The usual pre-convention meeting of the Council will be held at the Daniel Boone Hotel, Sunday evening at 5:30 o'clock. This early hour was chosen in order that adjournment may be had in time for the members to be present at the Sister Kenny meeting at the Shrine Mosque.

Hotel Accommodations

Room reservations should be made without delay. Headquarters will be maintained at the Daniel Boone Hotel, where all meetings will be held.

Committee on General Arrangements

The local committee on arrangements named by Dr. Andrew E. Amick, President of Kanawha Medical Society, is composed of the following: Dr. T. G. Reed, Chairman; and Drs. Henry E. Baum, R. K. Buford, R. H. Dunn, W. Paul Elkin, V. L. Lance, Thomas W. Nale, J. U. Rohr, E. W. Squire, B. H. Swint and A. A. Wilson.

WILL DEMONSTRATE METHOD OF TREATING INFANTILE PARALYSIS

The Kenny method of treating Infantile Paralysis will be demonstrated by Sister Elizabeth Kenny, of Minneapolis, during the annual meeting of the West Virginia State Medical Association, at Charleston, May 17-18.

SISTER ELIZABETH KENNY

Sister Kenny will address a public meeting at the Shrine Mosque, Charleston, Sunday evening, May 16, and will conduct her first clinic at Morris Memorial Hospital, at Milton, following a luncheon in her honor at noon, Monday, May 17. This luncheon is open to all doctors who wish to attend the clinic. Arrangements are in charge of Dr. Howard A. Swart, of Charleston, and reservations should be filed with him immediately. All doctors will be guests of the hospital at the luncheon.

Definite arrangements for the place of holding the clinics in Charleston have not yet been made, but announcement of complete plans will be made within the next few days.

Sister Kenny has agreed to see as many polio cases as time will permit.

Polio Study Unit at Yale

Yale University has received a grant of $150,000 from The National Foundation for Infantile Paralysis for the establishment of a poliomyelitis study unit.

JOURNAL SAYS PHYSICIANS FROM LARGER CITIES MUST VOLUNTEER

Young available physicians in the large cities of the country, particularly in those of the eastern seaboard, whose failure to volunteer has caused a lag in the procurement of medical officers for the armed forces, should be called before the bar of public opinion, *The Journal of the American Medical Association* for March 27 declares in an editorial. *The Journal* says:

"At a recent meeting in Washington of the Directing Board of the Procurement and Assignment Service for Physicians, Dentists and Veterinarians with the Officer Procurement Service of the United States Army and with representatives of other governmental agencies, evidence was clearly set forth that the procurement of medical officers for the armed forces is lagging. The responsibility rests unquestionably on the failure of young available physicians in the large cities of the country, particularly those of the eastern seaboard, to volunteer. Officers of the medical societies of New York, Massachusetts and Connecticut were present and the situation was placed before them. The rural areas of the United States have contributed doctors not only up to such quotas as were assigned to them but in many instances well beyond these quotas; it is simply impossible to anticipate that they will make a further contribution at this time. In the meantime, New York, Brooklyn, Boston and some of the larger communities in the states of Connecticut, New Jersey, Pennsylvania and California have failed even to approximate their quotas.

"The needs of the armed forces for physicians during 1943 are well defined. The number of physicians to be expected from recent graduates, interns and those now holding residencies has been determined. Beyond this number at least six thousand more physicians must come from the civilian population. The Procurement and Assignment Service for Physicians, Dentists and Veterinarians has devised a technic which involves, first, a determination of the availability of the physician concerned or his essentiality for any civilian position which he occupies; second, notification of the physician of his availability and a request that he appear before his local procurement board; third, a notification of the Selective Service Board of the fact that the physician concerned is considered available and that he has failed to volunteer. Thus far pressure beyond this has not been exercised. There re-

mains, however, the mobilization of the pressure of public opinion.

"In some instances physicians have declared flatly to representatives of the Procurement and Assignment Service and the Officer Procurement Service that they do not wish to volunteer and that they will not volunteer. When it is known to other physicians in the community that a physician under 38 years of age, declared available by the Procurement and Assignment Service, refuses to volunteer in this time of the nation's need, when many an older physician, frequently with innumerable obligations, has given up his home, his practice and the responsibilities of years to participate in this war, the public has a right to know that the younger physician is not willing to do his part. Certainly the Procurement and Assignment Service should consider the possibility at this advanced stage of the war effort of making public through the state medical journals not only the names of those who are already participating in the war but also the names of those who have been declared available and have not themselves ever indicated a willingness to participate. Let them be called before the bar of public opinion!"

DR. MOORHEAD ON WAR SURGERY

Dr. John J. Moorhead, of New York City, who will deliver an address before the West Virginia State Medical Association at Charleston, Tuesday, May 18, 1943, was in Hawaii at the time of the sneak attack by the Japs on Pearl Harbor, December 7, 1941. Dr. Moorhead immediately offered his services to the military authorities and joined other doctors there in caring for the hundreds of victims of that attack.

Dr. Moorhead, with one Samuel Berman, a technician in New York, had devised an apparatus or probe which he calls a "locator", and which was used to splendid advantage at that time in ascertaining the exact location of shrapnel and other foreign bodies in wounds. It has been declared to be the most valuable surgical instrument to come out of the present war, and, with the use of the sulfa drugs, has been the means of saving the lives of hundreds of those wounded at Pearl Harbor and elsewhere on the fighting fronts. "Locators" are now being manufactured in large quantities for use in war surgery all over the world.

In his address at the convention, Dr. Moorhead will speak on the subject of "War Surgery Practices."

D.P.A. ADVISORY COMMITTEE MEETS

At a meeting of the Advisory Committee to the Department of Public Assistance, held in Charleston, April 20, 1943, recommendation was made that in the treatment of trachoma, the patient be placed under the care of a general practitioner in his home community under the same arrangement that covers medical care of other relief cases. The committee further recommended that where the patient does not respond to such treatment, the case be referred to the nearest ophthalmologist for continued treatment, and that the charge for such service be fixed at $3 per treatment, the amount heretofore fixed by the state ophthalmologist as the proper fee for such service.

The committee also recommended the appointment of an assistant medical director for the Bureau of Medical Services, to assist in the administration of the various medical care programs which come under the Department of Public Assistance. Dr. Paul R. Gerhardt is Chief of the Bureau of Medical Services.

ANNUAL MEETING WOMAN'S AUXILIARY

The 19th Annual Meeting of the Woman's Auxiliary to the West Virginia State Medical Association will be held at Charleston, May 17-18, simultaneously with the State Association. All sessions will be held at the Daniel Boone Hotel.

An interesting program has been arranged for the two-day meeting, which will close Tuesday afternoon, May 18, with the post-convention meeting of the Executive Board. Mrs. Ralph Hogshead, President of the Auxiliary, will preside.

A meeting of the Executive Board will be held May 17, followed by a luncheon at the Elks Club. A tea will be given that afternoon at the residence of Mrs. U. G. McClure, with the retiring officers of the Woman's Auxiliary to the Kanawha Medical Society as hostesses. The convention will be formally opened Tuesday, May 18, at 9:30 A. M. Dr. Alan F. Guttmacher, of Baltimore, will address a luncheon at noon at the Elks' Club.

Mrs. John P. Helmick, of Fairmont, is the President-elect of the Auxiliary, and will be installed as President at the meeting on Tuesday, May 18.

Mrs. Harry V. Thomas, of Clarksburg, is Chairman of the Program Committee, and Mrs. O. H. Bobbitt, of Charleston, is local Chairman of the Committee on Arrangements.

AMERICAN BOARD OBS. AND GYN., INC.

The general oral and pathological examinations (Part II) for all candidates will be conducted at Pittsburgh, Pennsylvania, by the entire Board from Thursday, May 20, through Tuesday, May 25, 1943. The Hotel Schenley in Pittsburgh will be the headquarters for the Board, and formal notice of the exact time of each candidate's examination will be sent him several weeks in advance of the examination dates.

The Office of the Surgeon-General (U. S. Army) has issued instructions that men in service, eligible for Board examinations, be encouraged to apply and that they may request orders to detached duty for the purpose of taking these examinations whenever possible.

Applications are now being received for the 1944 examinations. For further information and application blanks, address Dr. Paul Titus, Secretary, 1015 Highland Building, Pittsburgh, Pennsylvania.

PLANNING COMMITTEE TO MEET

The initial meeting of the Fact Finding and Planning Committee, recently appointed by Dr. R. J. Wilkinson, President of the West Virginia State Medical Association will be held Sunday, May 16, at 3:00, P. M., at the Daniel Boone Hotel, Charleston.

The committee is composed of the following: Dr. Ray M. Bobbitt, Huntington, Chairman; and, Drs. D. A. MacGregor, Wheeling; Thomas L. Harris, Parkersburg; John P. Helmick, Fairmont; Frank V. Langfitt, Clarksburg; Carl E. Johnson, Morgantown; Frank J. Holroyd, Princeton; B. H. Swint, Charleston; and, Hu Myers, Philippi.

PHYSICIANS LICENSED TO PRACTICE

At a meeting of the Public Health Council, held at Charleston, March 1, 2 and 3, the following physicians were licensed by examination to practice medicine in West Virginia: Dr. Eugene de Angelis, Morgantown; Dr. Max Erwin Johnson, Denmar; and Dr. George Hirokazu Tsunekawa, Charleston.

The following doctors were licensed by reciprocity: Dr. Ernest Luke Shore, (N.J.) Coalwood; and Dr. Tracy Neil Spencer, Jr. (N.C.) Oak Hill.

The next meeting of the Public Health Council will be held July 6, 7 and 8, at Charleston.

HANNA NEW D.P.A. HEAD

Homer W. Hanna, Director of Unemployment Compensation, has been appointed by Governor Neely as Director of the Department of Public Assistance, whose nomination for reappointment was rejected by the Senate. Mr. Kenny retired from office March 12, and T. J. Ingersoll, Chief of the Division of Audits and Accounts of the D.P.A., had been serving as Acting Director since that time.

A. M. A. HOUSE OF DELEGATES

The regular annual session of the House of Delegates of the American Medical Association will convene in Chicago, June 7, 1943. Dr. James E. Paullin, of Atlanta, Georgia, will be installed as President on Tuesday, June 8.

The 1943 meeting of the American Medical Association scheduled for San Francisco was cancelled on account of the war.

Venereal Center at Camp Fairchance

Camp Fairchance, in Boone County, which has been in operation for several years as a camp for underprivileged children, has been designated as a venereal disease center by the State Health Department. A decision was reached sometime ago by the DPA to discontinue its program there, and the camp will be converted into a hospital just as soon as federal funds are made available.

Establishment of a center for the treatment of venereal diseases among prostitutes was authorized by the 1943 legislature. Under the act, prostitutes from any county in the state may be confined for treatment.

Dr. C. F. McClintic, State Health Commissioner, has made application under the Lanham act for $200,000 per annum for the operation of the institution.

Nazi Medical Care

Germany admits officially that its civilians are now served by one doctor for every 12,000 to 15,000 persons, instead of by one for every 2,000, as formerly, according to *The Times* of London. The British Military Intelligence gives a slightly different ratio, 1:10,000. Factors said to have contributed to the deterioration of German medical service are the war with Russia, the elimination of Jewish doctors, and a 50 per cent reduction since 1933 in the number of medical students.—*Medical Economics.*

CONVENTION PROGRAM
SEVENTY - SIXTH ANNUAL MEETING
of the
West Virginia State Medical Association
DANIEL BOONE HOTEL, CHARLESTON
May 17-18, 1943

SUNDAY AFTERNOON
May 16

1:00—Meeting of the Journal Publication Committee.
Dr. Walter E. Vest, *presiding.*

3:00—Meeting of Fact Finding and Planning Committee.
Dr. Ray M. Bobbitt, *presiding.*

5:30—Meeting of the Council.
Dr. R. O. Rogers, *presiding.*

SUNDAY EVENING
(Shrine Mosque)

9:00—"The Kenny Concept of Infantile Paralysis."
Sister Elizabeth Kenny, Elizabeth Kenny Institute, Minneapolis, Minnesota.

MONDAY MORNING
May 17

9:00—Call to Order—Dr. R. J. Wilkinson, Huntington, President.
Invocation — Rev. Wallace M. Alston, Pastor, First Presbyterian Church, Charleston.
Address of Welcome—Dr. Andrew E. Amick, President, Kanawha Medical Society.
Response—Dr. Robert J. Reed, Jr., Wheeling.

10:00—"Some Practical Considerations in the Diagnosis and Treatment of Eye, Ear, Nose and Throat Conditions of Interest to the General Practitioner."
Dr. Henry M. Goodyear, Associate Professor Oto-Laryngology, University of Cincinnati College of Medicine, Cincinnati, Ohio.
Dr. V. E. Holcombe, *presiding.*

11:00—"Acute Respiratory Infections."
Dr. Henry Field, Jr., Professor of Internal Medicine, University of Michigan Medical School, Ann Arbor, Michigan.
Dr. James L. Wade, *presiding.*

MONDAY AFTERNOON

12:15—Society and Section Luncheons (As Announced).

2:15—ORATION ON MEDICINE
"The Effect of Anoxia on the Body."
Dr. E. J. Van Liere, Dean, School of Medicine, West Virginia University, Morgantown.
Dr. R. J. Wilkinson, *presiding.*

The effects of anoxia on the vital processes of the body will be discussed. The relation of anoxia to clinical medicine will be pointed out, as well as its application to aviation medicine.

(Lantern Slides)

3:00—"Maintaining Adequate Nutrition in Wartime."
Dr. W. H. Sebrell, Chief, Division of Chemotherapy, National Institute of Health, Bethesda, Maryland.
Dr. Andrew E. Amick, *presiding.*

The prevalence of deficient diets and deficiency diseases in the United States preceding the war; the nature of the most common of these deficiencies and measures which are being taken to combat them; the need for a distribution program in order to insure dietary adequacy; the special feeding problems of the civilian population during wartime; the Federal Government's nutrition program, including the special problems of industrial nutrition, health department activities, etc., are some of the matters which will be discussed by the speaker.

4:00—"Peripheral Vascular Disease and Industry."
Dr. A. Wilbur Duryee, Associate Clinical Professor of Medicine, New York Postgraduate Medical School and Hospital, Columbia University, New York City.

Dr. John P. Helmick, *presiding.*

The subject will cover the various pathological conditions which may be present previous to injury and aggravated by industrial accidents and will also include problems which are directly secondary to injuries affecting the arteries, veins, and lymphatics in the arms and legs. Diagnostic tests and the treatment of such injuries once they have occurred will be discussed. The problem of prophylaxis and the prevention of vascular damage in industrial accidents will be emphasized.

(Lantern Slides)

MONDAY EVENING

8:30—Address by Sister Elizabeth Kenny, Minneapolis, Minnesota.

Dr. R. J. Wilkinson, *presiding.*

9:00—ADDRESS OF THE PRESIDENT

"This is my Story."

Dr. R. J. Wilkinson, Huntington.

Dr. W. T. Gocke, *presiding.*

9:30—HOUSE OF DELEGATES (FIRST SESSION)

Ballroom

TUESDAY MORNING
May 18

9:30—"The Management of Severe Burns."

Capt. James S. Klumpp, M. C., USNR, Huntington (now on active duty in the Navy).

Dr. O. B. Biern, *presiding.*

10:45—"A Brief Excursion Into the Extension of Radical Surgery in the Treatment of Cancer."

Dr. George T. Pack, Assistant Professor of Clinical Surgery, Cornell University, New York, N. Y.

Dr. C. B. Wright, *presiding.*

Based on the knowledge of the natural history of the disease, the surgeon must adopt new principles of radical removal of the primary and secondary cancers of different histological types. Emphasis will be placed on the management of certain cancers in particular to illustrate this point, such as cancers of the cardiac end of the stomach, malignant melanomas, cancers of the rectum and tumors of the extremities.

(Lantern Slides)

TUESDAY AFTERNOON

12:00—Society and Section Luncheons (As Announced)

2:00—ORATION ON SURGERY

"Neurosurgical Procedures for the Relief of Pain."

Dr. Claude C. Coleman, Professor Neurosurgery, Medical College of Virginia, Richmond.

Dr. R. J. Wilkinson, *presiding.*

Patients whose main complaint is severe chronic pain form a considerable number of the cases studied in a neurosurgical clinic. Procedures designed for the relief of pain in such cases may or may not correct the pathological condition responsible for the pain. In some of the most favorable cases the pathology is unknown. In another large group in which the patient consults the neurological surgeon solely because of pain, the pathology consists of mechanical compression on nerve roots. These cases are easily relieved and they constitute a most satisfactory group.

(Lantern Slides)

3:00—"War Surgery Practices."

Dr. John J. Moorhead, New York, N. Y.

Dr. C. O. Post, *presiding.*

4:00—"The Social Problems of Gynecology and Obstetrics."

Dr. Alan F. Guttmacher, Associate Professor of Obstetrics, Johns Hopkins University School of Medicine, Baltimore, Maryland.

Dr. W. W. Point, *presiding.*

In this changing world it is important to take stock of various social attitudes toward some phenomena of reproduction. The past, present and future status of abortion, sterilization, contraception, artificial insemination and infanticide will be discussed.

TUESDAY EVENING

8:30—"Some Remarks on Current Medico-Military Problems."

Brig. Gen. Fred W. Rankin, M. C., Louisville, Kentucky. Chief Consultant in Surgery to the United States Army, Washington. President Americal Medical Association.

Dr. R. J. Wilkinson, *presiding.*

9:15—HOUSE OF DELEGATES (SECOND SESSION)

Ballroom

Annual Election of Officers

CONVENTION SPEAKERS

(In Order of Appearance on Program)

Sister Elizabeth Kenny, of the Elizabeth Kenny Institute, Minneapolis, Minnesota, was for many years a nurse in the Australian bush; came to America in 1940; is known all over the world for her method of treating poliomyelitis; author in collaboration with Dr. John Pohl of Minneapolis, of "The Kenny Concept in the Treatment of Infantile Paralysis."

Dr. Henry Marks Goodyear, Associate Professor Oto-Laryngology, University of Cincinnati College of Medicine; American Board of Oto-Laryngology; American Academy of Ophthalmology and Oto-Laryngology; American Laryngological Association; American Otological Society, Inc.; Fellow American College of Surgeons.

Dr. Henry Field, Jr., Ann Arbor, Michigan; Professor of Internal Medicine, University of Michigan Medical School.

Dr. E. J. Van Liere, Dean, School of Medicine, West Virginia University, Morgantown; F. A. C. P.

Dr. W. H. Sebrell, Chief, Division of Chemotherapy, National Institute of Health, Bethesda, Maryland; F. A. C. P.; Surgeon, U. S. P. H. S.

Dr. A. Wilbur Duryee, Associate Clinical Professor of Medicine, New York Postgraduate Medical School and Hospital, Columbia University, New York City, and Chief of the Peripheral Vascular Disease Clinic of the same hospital; associate attending physician at Goldwater Memorial Hospital, New York City.

Dr. R. J. Wilkinson, Huntington, West Virginia, President West Virginia State Medical Association; Graduate Medical School of Virginia; American Board of Surgery; Southeastern Surgical Congress; F. A. C. S.

Capt. James S. Klumpp, M. C., USNR, Huntington; graduate University of Michigan Medical School; on active duty in the Navy.

Dr. George T. Pack, Assistant Professor of Clinical Surgery, Cornell University, New York; attending surgeon at Memorial Hospital for Cancer and Allied Diseases; editor of three books on the treatment of cancer, as well as several other books on neoplastic diseases.

Dr. Claude C. Coleman, Professor Neurosurgery, Medical College of Virginia, Richmond; American Board of Surgery; American Board of Neurological Surgery.

Col. John J. Moorhead, M. C., New York City, American Board of Surgery; F. A. C. S.

Dr. Alan F. Guttmacher, Associate Professor of Obstetrics, Johns Hopkins University School of Medicine, Baltimore, Maryland; Chief in obstetrics at Sinai Hospital, Baltimore; diplomate of the American Board of Obstetrics; author of two books and many papers.

Brig. Gen. Fred W. Rankin, M. C., Louisville, Kentucky; Chief Consultant in Surgery to the United States Army, Surgeon General's office, Washington, D. C.; President American Medical Association; author of Surgery of the Colon"; and numerous papers on clinical surgery and surgical pathology; co-author of "The Colon, Rectus, and Anus", and "Cancer of the Colon and the Rectus."

DELEGATES AND ALTERNATES

(Compiled as of April 22, 1943)

B-R-T—Delegates, Drs. Guy H. Michael, Belington; W. E. Whiteside, Parsons; and W. G. Harper, Elkins. Alternates, Drs. Hu Myers, Philippi; M. H. Maxwell, Elkins; and H. H. Bolton, Thomas.

Boone County—Delegate, Dr. A. C. Lewis, Seth.

Brooke County—Delegate, Dr. C. R. Megahan, Follansbee.

Cabell County—Delegates, Drs. C. D. Genge, J. J. Brandabur, T. G. Folsom, J. H. Moore, W. C. Swann, and R. M. Wylie, Huntington. Alternates, Drs. E. J. Humphrey, A. D. Kessler, G. A. Ratcliff, R. S. Van Metre, and C. A. Willis, Huntington.

Central W. Va.—Delegates, Drs. J. E. Cofer, Bergoo, and M. T. Morrison, Sutton. Alternate, Dr. J. C. Eakle, Sutton.

Doddridge County—Delegate, Dr. A. Poole, West Union.

Eastern Panhandle—Delegates, Drs. G. O. Martin, and Roger E. Clapham, Martinsburg. Alternates, Elizabeth McFetridge, Shepherdstown, and R. B. Talbott, Martinsburg.

Fayette County—Delegates, Drs. Eugene S. Carter, Jr., Boomer; W. P. Bittinger, Summerlee; and, M. A. Moore, Longacre. Alternates, Drs. A. E. Bays and C. H. Englefried, Montgomery.

Greenbrier Valley—Delegates, Drs. Herbert Duncan, Lewisburg; and J. G. Leech, Quinwood. Alternate, Dr. A. D. Ferrell, Lewisburg.

Hancock County—Delegates, Drs. Thos. A. Slate, and L. O. Schwartz, Weirton. Alternates, Drs. M. Bogarad and A. B. Rinehart, Weirton.

Harrison County—Delegates, Drs. John C. Kerr, Clarksburg; B. S. Brake, and L. H. Mills, Clarksburg, and Dr. O. W. Ladwig, Wilsonburg. Alternates, Drs. D. H. Lough, C. S. Slater, and E. B. Wright, Clarksburg.

Kanawha—Delegates, Drs. G. P. Heffner, T. G. Reed, Geo. F. Grisinger, Hugh A. Bailey, A. A. Wilson, W. W. Point, E. W. Squire, A. Spates Brady, and W. C. Stewart, Charleston. Alternates, Drs. Henry Glass, O. H. Bobbitt, V. E. Lance, W. F. Shirkey, and W. P. Black, Charleston; H. H. Fisher, Dunbar; and, R. H. Dunn, South Charleston.

Lewis County—Delegates, Drs. E. A. Trinkle, and R. M. Fisher, Weston. Alternate, Dr. Guy Stalnaker, Glenville.

Logan County—Delegates, Drs. T. H. Millman, Earling, and Frank Jamison, Dehue.

Marion County—Delegates, Drs. John P. Helmick, and H. S. Keister, Fairmont; and, G. R. Miller, Fairview. Alternates, Drs. J. W. Davis and E. D. Wise, Fairmont.

Marshall County—Delegate, Dr. J. A. Striebich, Moundsville.

Mason County—Delegate, Dr. Max Koenigsberg, Point Pleasant.

Mercer County—Delegates, Drs. Frank J. Holroyd, Princeton; and, James Shanklin and H. G. Steele, Bluefield.

McDowell County—Delegates, Drs. L. H. Armentrout and J. C. Hutchinson, Welch; J. H. Anderson, Hemphill; and, J. K. Cooper, Premier. Alternates, Drs. A. H. Bracey, Welch, and N. H. Dyer, Bartley.

Mingo County—Delegate, Dr. Geo. W. Easley, and J. C. Lawson, Williamson. Alternate, Dr. G. B. Irvine, Williamson.

Monongalia County—Delegates, Drs. R. R. Summers, E. F. Heiskell and C. B. Pride, Morgantown. Alternates, Drs. C. C. Romine and Eldon B. Tucker, Morgantown.

Ohio County—Delegate, Dr. R. D. Gill, Wheeling.

Parkersburg Academy—Delegates, Drs. W. F. Rogers, W. R. Goff and S. M. Prunty, Parkersburg; and Curtis P. Artz, Grantsville. Alternates, Drs. A. Morgan Dearman, and Fred Potter, Parkersburg; and R. C. Newman, Spencer.

Potomac Valley—Delegate, Dr. E. A. Courrier, Keyser.

Preston County—Delegates, Drs. C. Y. Moser, and J. F. Lehman, Kingwood; and, David Salkin, Hopemont. Alternates, Drs. H. C. Miller, Eglon, and C. E. Smith, Terra Alta.

Raleigh County—Delegates, Drs. T. U. Vermillion and L. G. Houser, Beckley; S. A. Ford, Edwight; and A. G. Bowles, Glen White. Alternates, Drs. K. M. Jarrell, Henrietta Marquis, H. A. Shafer and A. U. Tieche, Beckley.

Summers County—Delegate, Dr. D. W. Ritter, Hinton.

Taylor County—Delegate, Dr. Paul P. Warden, Grafton.

Wetzel County—Delegate, Dr. K. M. Hornbrook, New Martinsville.

Wyoming County—Delegate, Dr. J. F. Biggart, Mullens.

SPECIAL SECTION LUNCHEONS

Daniel Boone Hotel

Monday, May 17

12:15—Eye, Ear, Nose & Throat Section. Dr. Henry M. Goodyear, Cincinnati, Ohio, honor guest. Subject, "Treatment and Diagnosis of Nasal Sinus Conditions With Emphasis on Their Relationship to Eye Conditions." (Dr. V. E. Holcombe, in charge.)

12:15—Sections on Internal Medicine and Pediatrics. Dr. Henry Field, Jr., Ann Arbor, Michigan, and Dr. W. H. Sebrell, Bethesda, Md., honor guests. (Dr. James L. Wade, in charge.)

12:15—West Virginia Heart Association and American College of Physicians. Dr. A. Wilbur Duryee, New York City, honor guest. (Drs. R. M. Wylie, and J. P. Helmick, in charge.)

Tuesday, May 18

12:00—West Virginia Obstetrical and Gynecological Society. Dr. Alan F. Guttmacher, Baltimore, Md., honor guest. (Dr. A. P. Hudgins, in charge.)

12:00—Section on Surgery. Dr. George T. Pack, New York City, and Col. John J. Moorhead, M. C., New York City, honor guests. (Dr. Chauncey B. Wright, in charge.)

6:00—Dinner meeting, Medical College of Virginia Alumni. Dr. Claude C. Coleman, Dr. W. T. Sanger, and Dean Jacques P. Gray, Medical College of Virginia, Richmond, honor guests. (Dr. A. U. Tieche, in charge.)

SCIENTIFIC EXHIBITS

Scientific exhibits will be set up in the ballroom, on the mezzanine floor, at the Daniel Boone Hotel. The exhibits will be arranged under the supervision of the Committee on Scientific Exhibits, composed of Dr. Hu Myers, Philippi, Chairman; and Drs. Fred R. Whittlesey, Morgantown and John P. Helmick, Fairmont. The following is a complete list of scientific exhibits arranged up to the time this issue of the JOURNAL went to press:

1. Dr. Walter G. J. Putschar, Charleston—"Pathology of Infectious Diseases."
2. Dr. Howard A. Swart, Charleston—"Newer Methods in the Treatment of Fractures."

3. Dr. A. P. Hudgins, Charleston—"The Sterile Couple."
4. Hopemont Sanitarium, Hopemont—"Minimal Tuberculosis."
5. Fairmont General Hospital, Fairmont—Fairmont General Hospital School of Nursing.
6. West Virginia Council of Hospital Service Plans—Non-profit Hospital Service Plans
7. West Virginia Cancer Committee—"Pathological Specimens."
8. West Virginia University School of Medicine—"Medical and Premedical Education in West Virginia."
9. State of West Virginia Department of Health, Division of Maternal and Child Hygiene—"Maternal and Child Hygiene."
10. State of West Virginia Department of Health, Bureau of Industrial Hygiene—"Industrial Hazards v. Protective Measures."
11. State of West Virginia Department of Health—Map showing general health conditions in West Virginia.
12. West Virginia League for Planned Parenthood—"Planned Parenthood is a Health Measure."
13. American Medical Association—"An Industrial Health Program for a County Medical Society."
14. American Medical Association—"Dietary Deficiency Diseases."

CONVENTION NOTES

The registration booth will be opened Sunday afternoon, May 16, at three o'clock. There will be no registration fee.

* * *

The ballroom at the Daniel Boone Hotel, where general sessions will be held, is air-conditioned. This is also true of the lobby, dining room, mezzanine and adjoining rooms.

* * *

The first session of the House of Delegates will be held Monday evening. The second session, at which new officers will be elected, will convene Tuesday evening following an address by Brig. Gen. Fred W. Rankin, M. C., President of the American Medical Association.

* * *

All meetings will be held in the ballroom at the Daniel Boone with the exception of the Sister Kenny meeting, Sunday evening, May 16, which will be held at the Shrine Mosque.

TECHNICAL EXHIBITS

The clubroom and sunroom on the mezzanine floor at the Daniel Boone Hotel will be used exclusively for technical exhibits. Every inch of available space will be utilized, but aisles of sufficient width to accommodate visitors comfortably will be kept open during the convention.

The following is a list of the exhibitors with a brief description of each exhibit:

A. S. ALOE COMPANY
Booth 5

A. S. Aloe Company will display in space No. 5 a complete line of American made stainless steel surgical instruments, surgical supplies and laboratory equipment. Many new and exclusive items will be shown.

THE BORDEN COMPANY
Booth 6

Today, with more American babies to be fed than ever before, The Borden Company is resolved to use every available resource to maintain an unfailing supply of scientific foods which provide the well balanced nutrition so essential in early life. These include Biolac, New Improved Dryco, Mull-Soy, Klim, Merrell-Soule Powdered Milks, and Borden's Irradiated Evaporated Milk.

BURROUGHS WELLCOME & CO.
Booth 13

Burroughs Wellcome & Co., New York, presents a representative group of fine chemicals and pharmaceutical preparations, together with new and important therapeutic agents of special interest to the medical profession.

CAMEL CIGARETTES
Booth 7

Camel Cigarettes will exhibit large detailed photographs of equipment used in comparative tests of the five largest-selling brands of cigarettes. Representatives will be available to discuss research. Trans-Lux News will be supplied throughout the meeting.

THE COCA-COLA COMPANY
Booth 3

Coca-Cola will be served to the delegates at the convention with the compliments of The Coca-Cola Company.

GENERAL ELECTRIC X-RAY CORPORATION
Booth 2

The General Electric X-Ray Corporation will be unable to exhibit equipment, owing to war conditions. However, Mr. S. L. Furches and Mr. J. R. Ardit will be on hand to greet the company's many friends and customers.

"THE JUNKET FOLKS"
CHR. HANSEN'S LABORATORY, INC.
Booth 14

In space No. 14, "The 'Junket' Folks," Chr. Hansen's Laboratory, Inc. Enlarged photos illustrate graphically the action of the rennet enzyme in forming softer finer milk curds. Display of "Junket" Brand Food Products. Free literature describes dietary uses of rennet-custards in infant, child, convalescent, or post-operative feeding. Well informed attendant on duty at all times.

KLOMAN INSTRUMENT CO., INC.
Booth 15

The Kloman Instrument Co., Inc., of Charleston, will display in Booth 15 a complete line of surgical instruments, medical equipment and supplies for the physician's office.

ELI LILLY & COMPANY
Booth 18

The Lilly exhibit is presented as a mark of respect for the West Virginia State Medical Association. Many Lilly products will be shown and attending Lilly medical service representatives will be pleased to aid physicians whenever possible.

MEAD JOHNSON & CO.
Booth 4

"Servamus Fidem" means We Are Keeping the Faith. Almost every physician thinks of Mead Johnson & Company as the maker of Dextri-Maltose, Pablum, Oleum Percomorphum, and other infant diet materials. But not all physicians are aware of the many helpful services this progressive company offers physicians. A visit to Booth No. 4 will be time well spent.

NATIONAL DRUG COMPANY
Booth 10

The National Drug Co., of Philadelphia, will present its well known line of biologicals, biochemicals and pharmaceuticals. Trained representatives will be available to explain recent developments in National research.

PARKE, DAVIS & COMPANY
Booth 12

At the Parke-Davis Exhibit, which has been streamlined because of present wartime requirements, you will find many new and scientific Pharmaceutical and Biological Products. Included in this display are such outstanding preparations as Phemerol, a non-toxic germicide and antiseptic; Vitamina; Sulfa Drugs; Despeciated Antitoxins, and a number of other products of timely interest. Able and courteous members of the Parke, Davis & Co. Staff are in daily attendance to serve you.

PETROGALAR LABORATORIES
Booth 11

Helpful information concerning the value of Petrogalar in the treatment of constipation is available at Booth No. 11. You are cordially invited to visit the Petrogalar Exhibit which will be in charge of Mr. E. R. Hollar.

POWERS & ANDERSON, INC.
Booth 16

Powers & Anderson, Inc., are exhibiting surgical instruments, equipment and supplies for the modern physician's office. The exhibit is in charge of Mr. E. G. Johnson and Mr. Robert E. Anderson, Jr.

W. B. SAUNDERS COMPANY
Booth 9

This publishing house will exhibit their complete line of books, including such new ones as the Mayo Clinic Volume, Lundy's "Anesthesia," Wharton's "Gynecology," The Military Medical and Surgical Manuals, Official U. S. Public Health Service Industrial Hygiene Manual, Stieglitz's "Geriatrics," Cutting's "Therapeutics," Dry's "Cardiology," Rehfuss' "Indigestion," Weiss & English's "Psychosomatic Medicine," and many others.

S. M. A. CORPORATION
Booth 8

Be sure to visit Booth No. 8 where a complete display of infant feeding and vitamin products of the S. M. A. Corporation is presented for your consideration. Mr. R. H. Gilbert will be in charge.

VANPELT & BROWN, INC.
Booth 1

You are cordially invited to visit VanPelt & Brown's exhibit of prescription specialties. These products have been received by the medical profession enthusiastically and it is believed well worth your time to stop and interview one of their representatives who will be on hand at all times during the meeting.

JOHN WYETH & BROTHER
Booth 17

You are cordially invited to visit booth No. 17, where John Wyeth and Brother will exhibit its line of specialties, including Phosphaljel, a new product indicated for special cases of Peptic Ulcer. Other products on display will be Amphojel, Kaomagma, Bepron, B-Plex, A.B.M.C. Ointment, and the Silver Picrate Products.

ANNUAL REPORTS OF COMMITTEES

COMMITTEE ON CANCER

The Committee on Cancer was appointed January 1, 1943, and so far no new matters have been referred to us. We have, however, participated in one project originated by last year's Committee.

At the last annual meeting of the State Association, Governor Neely expressed his interest in a more liberal cancer program and invited the State Society to confer with him about it. As a result, last year's Cancer Committee met with the Governor and later with the Legislative Interim Committee and with the legislative committees of both houses. A bill has been passed, providing for the establishment of a Cancer Control Department in the office of the State Health Commissioner. The sum of $50,000.00 annually for the next two years has been provided. It will, of course, be necessary for the members of the medical profession to help conserve this fund and to make the most intelligent use of it. Later appropriations will probably depend on the care with which the present appropriation is expended.

The Committee believes that the Cancer program should be taken to every County Medical Society and is at present making plans to put on a cancer program in any County Society which expresses a desire for it.

J. Ross Hunter, M. D.,
Chairman;
Hu C. Myers, M. D.,
Cole D. Genge, M. D.

COMMITTEE ON CHILD WELFARE

The function of the Committee on Child Welfare originally was to promote and carry on the pediatric "refresher" courses to the general practitioners. This program, which was never too successful, has of necessity been discontinued because of the war.

Your Committee this year is sponsoring an exhibit of the Metropolitan Life Insurance Company at the coming meeting of the State Association. The subject of the exhibit is "Rheumatic Fever."

Rheumatic fever is an important enemy of child health today. The number of cases of the disease is uncertain, but its seriousness is evidenced by its mortality. Between ages 10 and 14 years, it causes more deaths than any other disease. Between ages 5 and 9, it is outranked only by the four principal communicable diseases of childhood combined, and between 15 and 24 years, only by tuberculosis.

At the Annual Meeting of the Academy of Pediatrics in Chicago, in November, 1942, the Executive Board approved the request of the Metropolitan Life Insurance Company for its endorsement of an educational program on rheumatic fever and heart disease. The Executive Board expressed the opinion that, even though most communities have fewer physicians available for service, health education efforts should be accelerated instead of being slackened in those diseases which war-time conditions may aggravate. Rheumatic fever is recognized as such a disease, and there is evidence that it will become an increasing health problem in the reconstruction period following the war.

The health education program on rheumatic fever and rheumatic heart disease will be conducted in cooperation with the American Heart Association, the American Academy of Pediatrics, the Crippled Children's Division of the United States Children's Bureau, State and local health departments, medical societies, and other agencies.

It is hoped that such a program carried on with the collective action of these organizations may mean that children suffering from rheumatic heart disease may be included in the Crippled Children's Program, where they rightfully belong.

Respectfully submitted,
Thos. G. Folsom, M. D.,
Chairman;
Raymond Sloan, M. D.,
Carl Johnson, M. D.,
Russell Bond, M. D.,
Harlow Connell, M. D.,
Arthur A. Shawkey, M. D.,
Theresa Snaith, M. D.

CONSERVATION OF VISION

Because of the absence in the service of one of the members, it has not been possible for the committee, as a whole, to meet. The chairman has conferred with the other member, Dr. R. A. Tomassene, on various phases of work pertaining to Conservation of Vision.

The luncheon meeting was attended by members of the Committee given for the State Committee on Conservation of Vision and Prevention of Blindness, appointed by Governor Neely. Prominent among those present were: Mrs. Merrill, Executive Secretary of the American Society for the Prevention of Blindness; McEnnis Moore, repre-

senting the American Foundation for the Blind; and, Raymond Kenny, the Director of the state Department of Public Assistance.

There is in preparation by the chairman a survey on various aspects of conservation of vision in the state with particular emphasis on industrial accidents, trachoma, acute glaucoma and opthalmia neonatorum. The results of this survey will be published in an article in the WEST VIRGINIA MEDICAL JOURNAL.

Both state institutions for the blind were visited by the chairman who consulted with the authorities relative to the care of the blind and methods in use for their rehabilitation.

Respectfully submitted,

V. E. HOLCOMBE, M. D.,
Chairman.

D.P.A. ADVISORY COMMITTEE

The Association's Advisory Committee to the Department of Public Assistance has worked in full cooperation with Dr. Paul R. Gerhardt, Chief of the Bureau of Medical Services of the Department of Public Assistance. Dr. Gerhardt was appointed February 1, 1942, to this post. For several years past, the Bureau had not had the services of a qualified physician to direct the various medical care programs which the Department of Public Assistance is carrying out. We feel that this has been a very progressive and forward step since only a doctor is qualified to direct medical care programs with any degree of intelligence or understanding of the doctor's problems, as well as those of the people.

The policy of the State Department of Public Assistance whereby grants were increased for medical care or hospitalization was discontinued on September 1, 1942. This policy was formulated by the Social Security Board in Washington and did not meet with any degree of success in this state. The medical or hospital needs of classified cases are now being met in the same manner as the needs of general relief clients are met, viz., the county director sends authorization papers directly to the doctor or the hospital for the necessary care. The client's grant is no longer increased in the hope that he will repay the doctor or hospital personally.

Our committee has held several meetings since report was submitted last July. At these meetings, a number of applications of doctors were approved for Adult Physical Rehabilitation Surgery, and a few hospitals received like approval.

Dr. Gerhardt, as Chief of the Bureau of Medical Services, presented a number of cases to the committee, wherein some decision as to policy or fees had to be made. Whenever any doctor over the state had a question or complaint regarding policy or fees in individual cases, these were always presented to the Advisory Committee for a decision. This method of referral has led to much better cooperation on the part of the medical profession and the State Department of Public Assistance.

In December, 1942, Mrs. Lucille Smith, Medical Social Work Consultant, Bureau of Public Assistance, Washington, D. C., was in Charleston and attended a meeting of the Advisory Committee. Mrs. Smith discussed her work and stated that the D. P. A. setup in West Virginia compared most favorably with that of other states. She particularly complimented the State Association on the arrangement whereby the Medical Advisory Committee approved certain qualified hospitals and physicians for Adult Physical Rehabilitation Surgery, as well as approving hospitals for the care of indigent people. Mrs. Smith further felt that the care of the medical needs of the indigent people in this state is being adequately met through this fine cooperative system.

Respectfully submitted,

HUGH A. BAILEY, M. D.,
Chairman;
THOMAS G. REED, M. D.,
H. L. GOODMAN, M. D.,
W. P. BITTINGER, M. D.

COMMITTEE ON INDUSTRIAL HEALTH

We wish to commend the State Medical Association and the State Health Department for planning and producing the Industrial Health Institutes which were held last October at Bluefield, Charleston, Fairmont and Wheeling. We believe these institutes were of great assistance to the general practitioner, as well as those engaged chiefly in industry. Every effort will be made to hold these institutes this year. It is hoped that the program will be expanded so that other cities in West Virginia will be included.

Your Committee wishes to recommend that the following objectives of industrial medicine be recognized:

1. The industrial physician should make it clearly understood by the employee and the employer that a physical examination to determine the mental and physical fitness of all workers is a practical method of job placement and is invaluable to the worker in the promotion of his physical welfare and

in the reduction of loss of working time due to injury and illness.

2. To educate the workers in personal hygiene and accident prevention.

3. To maintain and improve the health and efficiency of those employed.

4. To reduce lost time due to illness or injury.

Your Committee also proposes the following principles in the practice of industrial medicine be endorsed by the State Medical Association.

a. That pre-employment and periodic examinations be made only by qualified examiners.

b. That pre-employment examination include a Wassermann test and x-ray of lungs when feasible.

c. That the practice of some employers of encouraging the employee to return to work too soon after an injury, merely to produce a good lost time record, be discouraged.

d. That in all industrial plants employing 500 or more persons an industrial physician should be provided. His duties should include the education of the worker in accident prevention and personal hygiene. He should also strive to eliminate or control all health hazards within the working environment. A registered nurse should be employed. Her duties should include first aid and services as directed by the industrial physician. Also, her duties could include a visit to the home of the sick or injured employee, where the food, sanitation, etc., would be investigated. In plants employing less than 500 persons, two or more could go together in employing the industrial physician and nurse.

e. That steps be taken to enact legislation whereby industrial diseases would be covered by the West Virginia State Compensation Fund. Silicosis is only one of such diseases covered at the present time.

Respectfully submitted,

E. F. GOTT, M. D.,
Chairman;
R. H. EDWARDS, M. D.,
J. B. CLINTON, M. D.,
MAX KOENIGSBERG, M. D.,
W. E. BREWER, M. D.

INTER-PROFESSIONAL RELATIONS

As Chairman of the Committee on Inter-Professional Relations, I wish to report that to date there has been no matters requiring action brought to our attention. Our Committee stands ready to function when such matters are presented.

A. P. BUTT, JR., M. D.,
Chairman.

LEGISLATIVE COMMITTEE

The legislative program of the West Virginia State Medical Association for the year 1943 was concerned with (1) a four year course for West Virginia medical students, (2) the establishment of a course in public health at the State University, (3) the enactment of a cancer control law, (4) increased efficiency in the control of tuberculosis, and (5) enabling legislation to legalize the status of hospital and medical service plans and permit the sale of certain medical care services to the public on a prepayment plan.

Four Year Medical Course

The act of the 1943 legislature which made it possible for medical students at West Virginia University to continue without interruption their last two years in a medical school outside the state is the successful culmination of constructive work done by a special committee appointed by Dr. R. K. Buford during his term of office as president in 1941. The committee was composed of Dr. R. J. Wilkinson, Dr. Frank Langfitt and Dr. Edward J. Van Liere. Dr. Ray M. Bobbitt and Dr. Frank J. Holroyd, both West Virginia University alumni, were added to the committee in 1942, and Dr. Andrew E. Amick in 1943.

The arrangements which the enabling law permitted and which have been practically completed with the Medical College of Virginia call for the transfer to that institution each year of at least 20 students who have completed their two years in the basic medical sciences at West Virginia University. The students so transferred are allowed to complete their last two years in clinical medicine at the Virginia school and upon graduation are issued diplomas certified to by the two participating schools. With only a nominal subsidy cost, West Virginia is able to provide for its students a full four-year medical course. At the same time, the prestige of the Medical College of Virginia as a medical center is increased and the status of medical education in the two Virginias is improved.

The work of the special committee, as it relates both to collaboration with the Medical College of Virginia and the passage of enabling legislation, represents one of the greatest achievements of the West Virginia State Medical Association. The pattern of interstate cooperation which has been developed may be the solution of the problems of nine schools in eight other states which offer only two years in the basic medical sciences.

Public Health Course

One of the definite trends in medical care is a wide extension of the functions of public health, and to supply in part the needs of an expanded service, the establishment of a course in public health at West Virginia University was recommended. A substantial item for this purpose was included in the University budget, but in the wind up of an economically minded legislature the appropriation was materially reduced, and it is doubtful if necessary funds to establish the course are available out of the general appropriation for personal services. It is unfortunate that the specific appropriation could not be retained, for the establishment of a course in public health would have been a logical companion achievement of the four-year medical course.

Cancer Control

The enactment of a cancer control law, with an appropriation of $50,000 a year to carry out its intent, represents a distinct social gain and places West Virginia in the list of those states which are making constructive efforts to reduce the death toll of a disease which apparently is on the increase. The law creates in the State Department of Health a Division of Cancer Control. It is estimated that, out of a total of 150,000 deaths from cancer each year in the United States, 50,000 lives could be saved through constructive education and by the efficient use of known facilities for treating the disease. The control program which the law sets up recognizes these facts and is directed accordingly. Financial support will be given to the Woman's Field Army of the American Society for the Control of Cancer, an organization which, on a voluntary basis, has done splendid educational work throughout the country. The State Health Commissioner is required to formulate certain standards of treatment which must be conformed to in the care of any patient paid for out of public funds. The program proposes to pay the cost of the care of indigent patients as far as funds are available.

The medical profession of West Virginia has obtained a human gain. It must see to it that the legislature has not acted in vain.

Tuberculosis Control

In connection with the more efficient control of tuberculosis, the State Medical Association endorsed and supported certain features of a bill drafted by the West Virginia Tuberculosis and Health Association. One of these had to do with declaring tuberculosis a communicable disease and establishing quarantine and compulsory commitment to state sanatoria of certain persons who are menaces to their communities. Another feature called for free hospitalization of all tuberculous persons in West Virginia who are not able to pay the cost. While this last feature is substantially taken care of by an annual appropriation of $360,000 to be administered by the Department of Public Assistance for hospitalization of the needy tuberculous, it is unfortunate that compulsory quarantine and compulsory sanatarium care did not obtain a legal status.

Prepayment Medical Care

The failure to obtain suitable legislation to legalize the status of hospital and medical service plans and permit the sale of certain medical care services to the public on a prepayment plan should not be construed as opposition on the part of the medical profession of West Virginia to the principle of prepayment medical care. The principle was endorsed unanimously by the House of Delegates of the State Medical Association at Huntington in July of last year. The almost even split in the Council early in January and the forced withdrawal of the legislative committee's support to any pending bill came about by reason of the fact that it did not seem possible at the time to write a law which would be acceptable to all sections of the state. Representatives of hospital service plans lacked the same capacity of a combined front, and the legislature had no alternative except that of enacting a makeshift law to serve a temporary purpose. The whole subject of enabling legislation would still seem to require some careful planning.

Efficient Assistance

The legislative committee takes this opportunity of expressing to the members of the 1943 legislature its appreciation of the unanimous support given legislation sponsored by the State Medical Association. The committee desires particularly to give full recognition to the splendid services rendered by Mr. Charles Lively, Executive Secretary. In a year when the medical profession of West Virginia can claim very definite achievement, a large part of the credit for achievement must go to Mr. Lively.

Respectfully submitted,

R. O. ROGERS, M. D.,
Chairman;
RAY M. BOBBITT, M. D.,
FRANK V. LANGFITT, M. D.,
GEORGE F. GRISINGER, M. D.,
GEORGE P. EVANS, M. D.

COMMITTEE ON MATERNAL WELFARE

Your Committee on Maternal Welfare is unable to make a report to you upon the results of this service in the state for the year 1942.

During this period, the Division of Vital Statistics of the State Department of Health has been swamped by the demand for birth certificates by men and women who are going into the military service or war industries. As a consequence of this emergency—the committee has not been in a position to secure data concerning births, maternal and neonatal deaths, et cetera, upon which to make any comparison with the previous years.

In the counties where any report has been available through the columns of the daily papers, it would seem that there has been an increase in the birth rate of from three to seven per cent. The question of maternal and neonatal mortality is so patently unreliable that the committee feels itself unable to form any opinion.

In view of the number of the state's physicians now in the government services, and the extraordinary demands consequently made upon those left at home, it has been determined to omit the refresher courses this year.

Your Committee on Maternal Welfare can only urge that all of us giving care to maternity cases shall not relax vigilance in our prenatal, natal and postnatal services during this grave wartime period.

Respectfully submitted,

JAMES R. BLOSS, M. D.,
Chairman;
E. F. HEISKELL, M. D.,
W. E. HOFFMAN, M. D.,
E. J. HUMPHREY, M. D.,
H. G. STEELE, M. D.,
M. B. WILLIAMS, M. D.

MEDICAL ECONOMICS COMMITTEE

The Medical Economics Committee has had no formal meeting during the past year. However, the following report is submitted:

It is the opinion of this committee that the practice of medicine in the United States has advanced to such a point that the people of this country are receiving the best type of medical care which the world has known. The marked progress which has been made has been developed under a free system of practice, largely through private initiative privately financed. Although medical service in this country is of a superior type, we have no reason to say that it cannot be improved upon, or to incur that it is obtainable by all who need it. Many laymen and some members of our profession are crying loudly for socialized medicine, partly because they believe we have made few moves to make medical, surgical and hospital service insurance available.

Your committee suggests continued study of medical, surgical and hospital insurance plans with the hope that a satisfactory plan can be drafted and submitted to the Legislature in 1945.

We feel that the establishment of a special "Fact Finding Committee" by the President of our association is a step forward in the development of an insurance plan whereby we can satisfactorily meet the rapidly growing demand for this type of medical, surgical and hospital service. Any plan submitted for legislative action should have the approval of the Council.

Respectfully submitted,

GUY MICHAEL, M. D.,
Chairman;
R. J. REED, JR., M. D.,
THOMAS L. HARRIS, M. D.,
MAX OATES, M. D.,
R. V. SHANKLIN, M. D.,
A. U. TIECHE, M. D.

COMMITTEE ON MEDICAL EDUCATION

For several years, the faculty of the School of Medicine at West Virginia University and the doctors of the State of West Virginia have felt that a better system of medical education is very much needed in the state. This need has become more acute in the last few years, due to constant uncertainty whether the students with lower grades could all be placed in other medical schools after the two years of medical work at the State University. A committee was appointed about two years ago to make a careful study of this condition, and after doing so, to draw their conclusions and make recommendations for the improvement of it to the Council of the West Virginia State Medical Association.

The survey the committee made was conducted with two objects in view: First, to ascertain the feasibility of building and maintaining a four-year medical school in the State of West Virginia; and, second, to affiliate with a school outside of the state.

The committee visited the Educational Department of the American Medical Association in Chi-

cago, the University of Wisconsin at Madison, the University of Cincinnati, the University of Pittsburgh and the Medical College of Virginia, at Richmond.

After an investigation, they arrived at the conclusion that the second plan was more desirable at this time, and that if in the future it is felt that the state can build and maintain a four-year medical school, that this plan offers a good foundation.

After investigating and studying the problem, the committee recommended that affiliation with an already established, recognized medical school outside of the state be attempted and that state legislature be requested to appropriate a sufficient sum of money to subsidize the plan. The committee made the report to the Council, which approved it. They also conferred with the Governor and secured his approval. They then appeared before a joint committee of the Senate and House and submitted their plan. A bill was introduced and passed unanimously by both Senate and House of Delegates.

It has been decided by the faculty of the School of Medicine of West Virginia University that the entering class shall be limited to thirty students. Definite arrangements have been made with the Medical College of Virginia to enroll in its junior class each year twenty students from the School of Medicine of West Virginia University.

Under the arrangements made the students from the School of Medicine of West Virginia University will pay the same tuition that is paid by medical students from the State of Virginia.

If in the future it would seem possible to increase the number of students in the classes at the Medical School of West Virginia University, and if it should not be possible for the Medical College of Virginia to accommodate more than our present arrangement provides for, namely, twenty, we feel sure that similar arrangements can be made with other schools.

The committee is very happy at the present time to report that the cooperative agreement between the Medical School of West Virginia University and the Medical College of Virginia will be effective with the class which will complete its two years in December, 1943.

FRANK V. LANGFITT, M. D.,
Chairman;
E. J. VAN LIERE, M. D.,
R. M. BOBBITT, M. D.,
ANDREW E. AMICK, M. D.,
FRANK J. HOLROYD, M. D.

STATE P. & A. COMMITTEE

The last meeting of the State Procurement and Assignment Committee was held at Charleston, September 11, 1942. At that time, I submitted a report showing that West Virginia had more than supplied its quota of doctors needed for military service in 1942.

At the time of the September meeting, we had 308 doctors from West Virginia in the military service, 39 more than the quota set for this state. In addition, 66 applications for commissions were pending. Rejections had totaled 67.

No drive for the commissioning of additional West Virginia doctors has been made during the past several months. However, several doctors whose applications were being processed have accepted commissions since that time. Several other doctors, of their own accord, and strictly for personal reasons, have patriotically applied for commissions notwithstanding the fact that they were classified by their local P. & A. committee as "essential." The Procurement and Assignment Service has taken the attitude all along that if a doctor feels that he should enter the service, he should be permitted to do so, even though he is classified as "essential."

The War Manpower Commission has recommended that interns and residents should apply for commissions promptly upon the completion of their service in the hospitals. In most instances this is being done.

At a meeting of the Procurement and Assignment Service for the Fifth Corps Area, held at Louisville late in December, 1942, it was announced that the ratio of doctors to the population in West Virginia, as of December 1, 1942, was one to 1,966. The average ratio desired is one to 1,500. In some parts of our state, particularly in sparsely settled rural communities, the ratio is very much higher. In some counties it is but one doctor to every 3,000 to 4,000 population.

Besides the need for doctors in rural areas (which need existed for some time prior to the beginning of World War II), there is an acute shortage of doctors in some of our industrial areas, particularly the coal fields. This matter has been made the subject of a special report to the Procurement and Assignment Service at Washington. What steps will be taken to alleviate the situation in the areas where the shortage exists, I am unable to say, although I believe it has been intimated that the U. S. Public Health Service will be called upon to

supply medical aid during the time the doctors who formerly practiced in such areas are in military service.

It has been suggested by some persons that the Public Health Council lower the standards required for the licensing of physicians in this state to the extent of permitting refugee doctors, of which there are 6,000 in the United States, to practice temporarily in this state. I do not know of any doctors in West Virginia who would like to see this step taken. Most doctors are outspoken in their opposition to any such plan, and the State Health Commissioner and the members of the Public Health Council have consistently declined to entertain the idea. Personally, I believe that this is as it should be. Once these refugee doctors are permitted to practice even upon a temporary basis in this state, great difficulty would be experienced in revoking their licenses at the end of the war.

In view of the fact that we have met and passed our quota for 1942, no quota will be assigned to us for 1943. Barring unforeseen circumstances, we will not be asked to furnish any additional doctors until at least 1944.

As of this date, (April 22, 1943), we have 399 West Virginia doctors in the military service. This is 130 above the quota of 269. It is impossible to report accurately the number of applications for commissions that are now pending, as some applications are made directly to the Surgeon General instead of through the central office of the Procurement and Assignment Service.

In several instances, it has been impossible for hospitals in West Virginia to obtain the services of interns and residents due to the great number who are accepting commissions in the army and navy. In view of these circumstances, it has been possible to secure the deferment of some interns and residents for another year of service in hospitals, or until replacement could be made.

We have been called upon twice within recent weeks to conduct another survey of doctors in West Virginia. This would necessitate the mailing out of questionnaires to all the doctors remaining in active practice in this state, making it necessary to augment the office force in the headquarters office of the West Virginia State Medical Association to compile and break down the information into the various categories suggested by the War Manpower Commission. Inasmuch as West Virginia is not to be called upon to furnish additional doctors during the present year, I thought it best not to make this new survey, suggesting to the Washington office that if and when we are asked to furnish more doctors, then I feel sure that the Association will gladly take the necessary steps to make available the information requested.

I do not feel that the Association at this time should take on this work, especially as we have already been required to lay a special levy to meet the deficit incurred in 1942, a pretty considerable part of which was caused by the employment of necessary extra office help to take care of the large volume of Procurement and Assignment work at that time.

There is still a great deal of Procurement and Assignment work being looked after in the headquarters office at Charleston. Correspondence is heavy and reports have to be made up from time to time. However, this work is being done at no added expense to the Association.

I wish to commend the fine spirit shown by the members of county and area Procurement and Assignment Committees. Without their wholehearted cooperation, the job would have been much more difficult to perform. I wish also to add a word of praise for the members of this Association who have so patriotically responded to every call for aid. Were the need apparent, I feel sure that many more doctors in West Virginia would manage somehow to arrange to serve with the armed forces.

As matters now stand, doctors who remain in practice on the home front are facing a tremendous problem of overwork. Barring epidemics, however, we can continue to hold the line until the return of our confreres to civilian life. This does not mean that we do not need doctors in the areas to which I have referred. However, I sincerely hope that it may be possible to arrange help of a temporary nature for the comparatively few areas in West Virginia where there is at present an acute shortage of doctors.

Respectfully submitted,

ROBERT K. BUFORD, M. D.,
Chairman.

COMMITTEE ON PUBLICITY

The medical profession has been rather reluctant over the past several years to recognize the fact that ethical medical publicity is necessary to the welfare of the profession. In some quarters, there has been much short-sighted opposition to placing before the public medical discoveries and achievements, or discussing medical and lay problems. Just at the

time when the "hue and cry over socialized medicine" has been rising, very little was done through any organized national effort toward publicity of the right sort. But as the years passed, a trend was very definitely evident from all parts of the country in which local, and in some instances state societies were beginning to attempt to reach the public through nontechnical, plainly written and acceptable medical publicity.

The West Virginia State Medical Association, at the state convention in Huntington last year, approved a resolution providing for the appointment of a State Publicity Committee, and such a committee was immediately appointed by Dr. R. O. Rogers, then President.

The State Publicity Committee immediately held several meetings and evolved a workable plan of presenting to each county medical society material for the local use of the society. It was suggested that each such society appoint a publicity committee to handle the details of carrying on the campaign through the press, the radio, and other local news outlets. It was pointed out that emphasis should be placed on the war-time problems facing the medical profession and the public, and stressing the importance of healthy living and the conservation of the physician's time. Through the cooperation of the Secretary of the State Association, mimeographed suggestions were made available, and the response was quite satisfying in a great many localities. Inquiries made by your committee have revealed that the majority of the County Medical Societies have carried on some type of publicity along the lines suggested.

The Committee takes this opportunity to thank Dr. R. O. Rogers, past president of the State Association, for his helpful suggestions and for an article which appeared in the JOURNAL. Likewise, we wish to thank Dr. W. E. Vest, who served on the original committee, for his wholehearted cooperation and helpful guidance. We take this opportunity to assure the members of the Association that your Committee will continue to strive to furnish honest, ethical and non-technical publicity on any medical subjects which the Association or Council believes should be brought to the attention of the members.

Respectfully submitted,

JAMES L. WADE, M. D.,
Chairman;
W. W. POINT, M. D.,
C. O. POST, M. D.

SCIENTIFIC WORK COMMITTEE

When it became apparent that component societies would have to rely to a great extent upon home talent for speakers at their winter meetings, your committee divided the state into three zones, with a member of the committee as chairman of each zone. A general call was then sent out to members of the Association asking for volunteers for addresses before component societies. The response was most gratifying and resulted in the scheduling by your committee of a number of addresses by West Virginia physicians, which were delivered before neighboring and local societies.

This speaker service is still being operated by the members of your committee who will continue to function as chairmen of their respective zones throughout the rest of the year. All future requests for speakers filed by the officers of component societies will be given prompt attention.

In arranging the program for the annual meeting this year, your committee was faced with two difficulties that did not present themselves to previous committees. One, to secure adequate talent from a profession overworked and depleted by the demands of war, and the other to condense a three-day meeting into two days. Naturally, drastic changes had to be made in our usual program, and we trust the members will sympathetically approve our acts. All section meetings were abolished except for luncheons for the necessary transaction of business, with only a few moments to devote to scientific pursuits. Discussions on all papers have been eliminated and a question period substituted therefor.

The members of your committee would be derelict in their duty if they did not express their deep thanks and appreciation to the guests who have made this program possible, to the chairmen of the various sections, and to our president and secretary for their enthusiastic help and cooperation.

Respectfully submitted,

O. B. BIERN, M. D.,
Chairman;
W. W. POINT, M. D.,
C. O. POST, M. D.

SYPHILIS COMMITTEE

At a meeting of the Syphilis Committee of the West Virginia State Medical Association held in the office of the State Health Commissioner, at Charleston, April 8, 1943, the following subjects were discussed and recommendations made:

(1) The proposed plan for venereal disease con-

trol in industry in Charleston and Kanawha County. Questions were raised regarding the reason for limiting this program to but one county, and it was brought out that Kanawha County was selected because of: (a) concentration of war industries; (b) population density; (c) high prevalence rates of venereal disease; (d) adequate public health personnel to carry out proposed measures.

In the opinion of the members of the committee the proposed plan was satisfactory, and it is believed that benefit will accrue through its institution.

(2) Ways and means of enhancing present case-holding rates were discussed briefly. One measure which had been proposed to the State Health Department pertaining to the exhibition of moving pictures of the entertainment variety in venereal disease clinics for the benefit of patients waiting for examination, treatment, or advice. This plan was proposed with the idea in mind that it would encourage better attendance at venereal disease clinics and consequently increase case-holding efficiency.

It is the opinion of the members of the committee that the proposed exhibition of entertainment films in venereal disease clinics is inadvisable. On the other hand, the committee approved the exhibit of venereal disease educational films in the clinics, provided it is found that such films encourage attendance.

(3) The establishment and maintenance of prophylaxis stations under local health department supervision and the establishment of a prophylaxis station at Huntington for the benefit of Selective Service registrants brought there for examination. It was agreed by the members of the committee that non-professional personnel could be utilized as attendants, provided they are given suitable training if such stations were established.

The usefulness of such stations was questioned by the members of the committee based on the fact that they would probably not be utilized by civilians unless widely advertised and such advertisement would perhaps invite criticism by religious groups.

The committee approved the establishment of a prophylaxis station at Huntington as requested by Captain Staats, Induction Center Medical Officer, but the State Health Commissioner suggested that inquiry be made at the office of the surgeon of the Fifth Service Command in order to determine whether or not he approved of this measure.

(4) Professional education.

No specific recommendations were made but the suggestion was offered that the State Health Department make available funds for the purpose of providing traveling expenses to medical experts in venereal disease control. Local societies could arrange for such experts to deliver lectures or seminars and the expenses incurred by the lecturer would be met by the State Health Department.

The meeting in the Commissioner's office adjourned and discussions were continued at the Daniel Boone Hotel.

Recommendation was made that the Syphilis Committee meet at regular intervals semi-annually. It was also recommended that the Syphilis Committee should be composed for the most part of members specializing in the treatment of syphilis and that the committee should be more or less permanent. It was suggested that some means might be worked out whereby the members of the Syphilis Committee would be officially accredited to the State Health Department, Bureau of Venereal Diseases, as consultants and, depending upon the amount of time which they could spare from their practices, assigned such duties as venereal disease clinic inspection, etc. Under this scheme members would receive compensation for time lost from practice and a travel allowance, and regular inspections of at least the larger venereal disease clinics could be mode.

Respectfully submitted,

R. D. GILL, M. D.,
Chairman;
C. A. HOFFMAN, M. D.,
L. E. NEAL, M. D.

OTHER REPORTS

The report of the Committee on Necrology will be made orally to the House of Delegates by the chairman, Dr. James R. Bloss, of Huntington. Besides Dr. Bloss, the committee is composed of Dr. H. R. Johnson, of Fairmont, and Dr. Chester Ogden, of Clarksburg.

The annual report of the Secretary will be prepared as of May 15 and submitted to the House of Delegates at the first session, May 17.

The report of the Treasurer, Dr. T. M. Barber, including the annual audit of the financial affairs of the Association, was presented to the Council and accepted at a meeting held January 21, 1943. The report was printed in the February issue of the JOURNAL.

Nineteenth Annual Meeting

Woman's Auxiliary to the West Virginia State Medical Association

May 17-18, 1943

Hotel Daniel Boone

HOSTESS

Woman's Auxiliary to the
Kanawha County Medical Society

SUNDAY, MAY 16

2:00—Registration .....Lobby
7:30—Reception for Sister Elizabeth Kenny—Mezzanine.
9:00—Open Meeting.....Shrine Mosque
Speaker—Sister Elizabeth Kenny.

MONDAY MORNING
May 17

10:00—Executive Board Meeting....Room 305
Presiding—Mrs. Ralph Hogshead.

MONDAY AFTERNOON

1:00—Luncheon.....Elks Club
Presiding—Mrs. Ralph Hogshead.
Guest Speakers—Dr. R. J. Wilkinson, Dr. A. E. Amick, Capt. James S. Klumpp, M. C., USNR.
4:00—Tea.....1592 Quarrier Street
Hostesses — Retiring officers of the Woman's Auxiliary to the Kanawha Medical Society.

MONDAY EVENING

6:30—Past President's Dinner—Main Dining Room.
Hostess—Mrs. Welch England.
8:00—Open meeting of the West Virginia State Medical Association.

TUESDAY MORNING
May 18

9:30—Formal Opening of Convention—Room 304.
Presiding—Mrs. Ralph Hogshead.
Invocation—Rev. Strother H. Campbell, Baptist Temple, Charleston.
Salute to the Flag—Mrs. M. L. O'Neale, Regent, John Young Chapter, Daughters of the American Revolution.
Address of Welcome — Mrs. U. G. McClure.
Response....Mrs. Upshur Higginbotham

Reports of Convention Committees

General Chairman..Mrs. H. V. Thomas
Credentials and Registration—Mrs. G. H. Barksdale.
Kanawha County Chairman—Mrs. O. H. Bobbitt.
Roll Call
Reports of Officers
Reports of Standing Committees
Reports of Special Committees
Reports of County Presidents
Announcements
Report of the Auditing Committee
Report of the Budget Committee
Courtesy Resolutions
Report of Nominating Committee—Mrs. Welch England, Chairman
Election of Officers
Installation of Officers — Mrs. V. E. Holcombe.
Acceptance of Gavel — Mrs. John P. Helmick.
In Memoriam.....Mrs. H. D. Gunning
Adjournment

TUESDAY AFTERNOON

May 18

1:00—Luncheon.....Elks Club
Presiding—Mrs. Ralph Hogshead.
Guest Speaker—Dr. Alan F. Guttmacher, Baltimore.
3:00—Post-convention Meeting of Executive Board.
Presiding—Mrs. John P. Helmick.

Doctors in the War

399 DOCTORS IN THE SERVICE

The report compiled by the West Virginia State Medical Association for the period from March 22 to April 22, 1943, shows that 399 West Virginia doctors are in the military service.

The following doctors have been reported as having accepted commissions during the past month:

	EASTERN PANHANDLE	
William A. Wallace	Martinsburg	Army
	FAYETTE	
J. N. Jarrett	Oak Hill	Army
	GREENBRIER	
L. B. Todd	Quinwood	Army
	OHIO	
Edward S. Phillips	Wheeling	Navy

THE WEST VIRGINIA MEDICAL JOURNAL

ATLAS BUILDING, CHARLESTON, W. VA.

The Committee on Publication is not responsible for the authenticity of opinion or statements made by authors or in communications submitted to this Journal for publication. The author or communicant shall be held entirely responsible.

WALTER E. VEST, M. D.
Editor
955 Fourth Ave.
Huntington, W. Va.

MR. CHARLES LIVELY
Business Manager
Atlas Building
Charleston, W. Va.

ASSOCIATE EDITORS:
EDWARD J. VAN LIERE, M. D.
Morgantown, W. Va.
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Welch, W. Va.

JAMES R. BLOSS, M. D., Editor Emeritus, Huntington

ENTERED AS SECOND-CLASS MATTER, JANUARY 1, 1926, AT THE POST OFFICE AT CHARLESTON, WEST VIRGINIA

Vol. XXXIX June, 1943 No. 6

THIS IS MY STORY*

By R. J. WILKINSON, M. D.
President, West Virginia State Medical Association
Huntington, West Virginia

To be elected president of the West Virginia State Medical Association is indeed a distinct honor and I am deeply grateful for this manifestation of confidence, particularly at this very critical period in the history of organized medicine. In accepting this responsibility I made no commitments other than a promise to work diligently for the betterment of the medical profession and the people of West Virginia. Your loyalty and earnest cooperation have been a real inspiration and have given me courage to attempt a program that is far-reaching but one that if adopted will better prepare us to meet more effectively the responsibilities that challenge our professional life.

Those of you who have taken time from your arduous duties to study the social and economic trend must be impressed with the growing demand for some reform to meet the increasing cost of medical care. Regardless of your individual feelings about this, the fact remains that we are all guilty and have contributed to the creation of conditions that justify some changes in our medical economic setup. In our desire to keep abreast with other lines of endeavor (and you know we have been traveling at a terrific speed for the past few years) we have overlooked some of the fundamental basic principles that have a profound bearing upon our professional future. Our sin has been one primarily of omission in that we have failed to realize or recognize many of our responsibilities.

It shall be my purpose in this short discourse to acquaint you with some of the responsibilities that vitally affect the profession of medicine and suggest some remedies in the hope that we can become a more unified body, for through a unity of purpose we can successfully cope with the foes that are attempting to destroy the principles upon which our profession has been founded.

THE AUTHOR

Dr. Wilkinson, graduate Medical College of Virginia; Fellow American College of Surgeons; Surgeon in charge of C. & O. Railway Hospital, and St. Mary's Hospital Staff, Huntington; President, West Virginia State Medical Association.

*Annual Address of President, West Virginia State Medical Association, 76th Annual Meeting, Charleston, May 17, 1943.

LIBRARY OF THE
COLLEGE OF PHYSICIANS

Our country is embroiled in an all-out global war and in meeting the needs of our armed forces we have reduced our ranks. Today there are between 40,000 and 50,000 physicians with the Army, Navy, and Public Health Service; therefore, the 80,000 physicians remaining must provide medical care for the millions of industrial workers and the public generally. If the armed forces are further augmented, obviously additional doctors will be required and this will necessitate a further readjustment on the home front. To meet this responsibility adequately it may be necessary to resort to some plan of distribution of the home physicians, for after all, this war must be won, and won as speedily as possible, lest our financial, economic and social structures be seriously impaired.

Notwithstanding the many hardships that will be imposed upon you, it is well to remember that these are minor indeed compared to what the boys on the firing line are experiencing. I reiterate a statement made to the Procurement and Assignment Committee many months ago at a time when confusion and misunderstanding caused anxiety among both the physicians and government agencies. I quote, "When the physicians of West Virginia are made sufficiently acquainted with the needs of our armed forces you can expect a generous response."

My faith in the physicians of West Virginia was justified because we have supplied 130 doctors over and above the quota assigned to us. Whatever the cost or sacrifice, I still have abiding faith in your patriotism; therefore, I feel that the government and the of this state can be assured of your wholehearted cooperation during this emergency.

HEALTH

The rapid strides that civilization has made in the past fifty years can largely be attributed to sanitation and other public health measures, and this obviously includes education. Most of these reforms that so vitally affect the health of our people were for years sponsored and directed by the medical profession. However, during the past decade there has been an insidious and gradual assumption of this responsibility by various governmental agencies, until today, unless we muster our forces and exert what is our prerogative and duty, we may soon anticipate full governmental control of this vital work.

The responsibility of our profession entails more than merely treating the sick, for in years gone by the public has looked to us for advice and guidance in all things pertaining to community health and welfare; but in our moments of selfishness we have overlooked this duty and have been content to leave matters of this kind to others, with the result that the public has lost confidence and is obtaining this advice from agencies that are, to say the least, foreign to our concept of what is best.

COST OF ADMINISTRATION

To every thinking man and woman it must be obvious that for every dollar expended by the federal government in furthering our state health work we in turn pay an increased tax to cover such service with an additional large sum for administration. The plan whereby the federal government matches dollars with the state in furthering health work is misleading and has given us a sense of false security, in that it appears on the surface that we are obtaining something free. This subsidy has created a condition throughout the country that makes health departments and other welfare agencies dependent upon the federal government for full maintenance of their respective services.

The problem of our tuberculous and mental patients deserves most careful study because they are, in most instances, dependent upon the state for hospitalization and medical care and are therefore a tax burden; consequently this maintenance cost should be kept within reasonable bounds consistent with efficient treatment.

Under our present plan both the tuberculosis and mental hospitals are politically controlled in that the Board of Control without medical supervision is charged with the responsibility of operating these institutions.

Some of the superintendents have undoubtedly in the past been appointed by the governor for political reasons and without due consideration of ability for this work. In making this statement I am not unmindful of the good work that is being done, in most instances, by the superintendents and the attending physicians at our institutions. However, the fact remains they are there by reason of political influence and obviously this does not always bespeak for the best interests of the patient.

In this connection I think it can be said, without fear of contradiction, that Governor Neely has a broad humanitarian viewpoint and through his cooperation with the medical profession many worthwhile reforms have been instituted. I have in mind the cancer control program; care of the indigent tuberculous patients through state appropriations and under the jurisdiction of the public health council; relief for mental cases by providing additional facilities; medical education program; and the establishment of a course in public health at West Virginia University.

It is the duty of the medical profession to study carefully the problems dealing with the health of our state and advise corrective measures that will insure the patient's welfare and at the same time afford protection to the taxpayers. To accomplish this task effectively, it will be necessary for the legislature to make many changes in our present health laws, and I feel confident this can be accomplished if the State Medical Association will agree to assume a large portion of the responsibility in fostering the program. The time has arrived when states should recognize the importance of providing for their own in health matters and perhaps in other lines of social welfare lest we ultimately lose the inherent states' rights that were provided by our forefathers when they wrote the Constitution.

MEDICAL SERVICE INSURANCE

It is generally conceded that the American people are receiving the highest type of medical service the world has ever known; and I am sure those of you who have kept informed regarding the medical economic trends realize that the cost of medical care today, due largely to this increased efficiency, is beyond the reach of the average wage earner when he is faced with a catastrophic illness. The rich and the indigent are adequately cared for but a member of the low income group must make an enormous sacrifice if his loved ones are to receive proper hospitalization and medical care.

When faced with a promise of full coverage from the "cradle to the grave", or as the English humorist would say, from the "womb to the tomb", it is natural that he should subscribe to a program of governmental control and especially so since we have failed to offer relief or to point out the evils of government medicine. The medical care of our citizens, be they indigent, low income group or rich, is the responsibility of our profession, and some way must be devised to care for all of these people without government aid or interference. To accomplish this efficiently it will be necessary for the physicians to put aside petty jealousies and personal greed; we must agree upon a program that we can submit to the legislature, a program that has the unanimous support of the profession.

Some form of prepayment hospital and medical care offers the best protection to all parties concerned and is in keeping with our promise to the members of the last legislature. In this promise we obligated ourselves to study the problems incident to prepayment medical care and submit a sane, workable state plan for their consideration, since legislation will be necessary to protect the nonprofit hospital and medical service plans from a tax that is now charged insurance companies.

MEDICAL EDUCATION

About the turn of the twentieth century chemistry began to assume a most important relationship to all types of human endeavor and during the past two or three decades the

world has really been awakened by the many startling discoveries of the chemists. These discoveries have exerted a far-reaching influence upon human life; consequently, the medical profession has kept abreast with these new ideas and has even rendered the chemist most valuable aid in perfecting many life-giving agencies. All of these changes have affected our medical education program by requiring a scientific premedical course of study and have greatly augmented the medical college work to the extent that four years of intensive study and one year of internship are now required by most states for licensure. This has a distinct bearing upon the physicians of the future, because if this program is allowed to expand further, the cost will soon be so great, if it is not already so, that young men who possess worthwhile attainments and the necessary qualities to become physicians will be forced to follow less costly lines of endeavor. This cost is not reckoned with in actual dollars invested but rather in the student's realization while still in premedical school that his acceptance into a medical college is largely through the recommendation of a professor of one of the science courses. This fear complex is further accentuated throughout the four years of medicine, since the boy realizes that through a union of medical schools his career can be ended at any time and all too frequently by men who are not physicians. With this fear of being "flunked" out of medicine constantly being brought to his attention, is it any wonder that the student, notwithstanding his desire to become a physician, fails to pass with satisfactory grades? No one can do his best while working under such a handicap.

SELECTION OF MEDICAL STUDENTS

We have a responsibility to our communities and to our profession in selecting boys for a medical career; but due to our selfishness, in that we have our diplomas, we have been willing to leave this selection to others, who frequently lack the necessary knowledge of the practice of medicine to pass intelligently upon a boy's qualifications. I do not mean to be critical of these men of science directing the destinies of our young men who aspire to be doctors. On the contrary, they are perhaps doing their best and I congratulate them in attempting this work, but this best does not qualify them for the final "say" about the boy's future in medicine. If scholastic attainments constitute the final criterion for admission to a medical school, then we can at an early date expect the doctor to be a superintelligent who possesses book knowledge but lacks the practical application to practice successfully the art of medicine.

The time has arrived when the question of medical education should be studied most carefully by the profession and a program decided upon that will restore at least in part to the medical men of this country the responsibility of premedical and medical education. Unless an interest is shown and some changes are made in our present program we can anticipate the day when rural areas will be without medical protection, unless by chance the government furnishes this service through regimentation.

PROFESSION HAS LOST PRESTIGE

Our profession has lost much of its prestige, due primarily to the increasing demand for the science courses in premedicine. In fact, our premedical students rarely show an interest in literary attainments, and many of them consequently cannot spell or write correctly, and they have a lack of knowledge of history, art, music and other subjects that have definite bearing upon social and intellectual development. Medicine always has been and always will be primarily an art, and if we are to be successful in maintaining our position as an honored profession, more attention must be paid to these almost forgotten requisites.

A closer cooperation between state medical societies and medical colleges is highly desirable since there is a common interest and an opportunity for mutual helpfulness.

May I suggest that some plan be perfected whereby all premedical students can be interviewed each year by a committee of repre-

sentative doctors appointed by our state medical societies. This mutual association of boys and physicians, would stimulate those who possess the qualities to study medicine, and assist those who do not measure up to the standards, in seeking other useful fields of endeavor before they have gone too far. It is indeed a tragedy to allow a boy to finish premedical work and a few years in medicine, and then through faults that are often not his own be denied the privilege of continuing his career. Likewise, this committee's recommendation should be required before admission into a medical school, thereby rendering a real assistance to the school in question and affording protection to our profession, even though this recommendation would not be the final authority for admission.

I am happy to tell you that there exists today, as never before, a closer relationship between the medical profession and our medical school at West Virginia University. Through this cooperation we were successful in having legislation passed that provides for our medical students' last two years of clinical work at the Medical College of Virginia. If this plan meets with success, as we have every reason to anticipate, then we may soon be called upon to provide additional facilities for our medical school to accommodate a larger number of students. The act of the last legislature in providing a subsidy whereby our boys can be furnished the last two years of their medical education in another state is an innovation, and from the complimentary editorials appearing in the current magazines you should feel elated, since this program was endorsed by the Council of the West Virginia State Medical Association in 1941. And it was only through your loyal cooperation that this worthwhile and perhaps far-reaching program could be perfected.

DOCTORS IN SERVICE

In the not too distant future many of our boys will be returning from the war, and it is timely that we give serious consideration as to how they are to be inducted into private practice with the least discomfort. No doubt many of you have seriously considered the advantages offered by group practice, and I leave the thought with you that this might be a happy solution to our problem. Many of these boys who have served our country will no doubt desire further training leading to a specialty, and through a group association with diplomates of the respective boards residency recognition might be accorded them.

The question of obtaining residencies in our hospitals will be difficult with the younger men who are finishing their internships and who probably will not be inducted into the Army having first claim for these appointments. Ample opportunity will be afforded the unscrupulous doctor to capitalize upon the misfortune of these boys, who, by reason of absence from practice, may be financially embarrassed and willing to accept a pittance for their work. In this connection I would have you remember that the day of large income from the practice of medicine is behind us, so why not, through an association of competent men, work together, thereby obtaining the greatest pleasure and at the same time making it possible for these young men to advance in medicine without the handicap of financial worry. An association of this kind would afford the patients a higher type of service and might be helpful in at least retarding the program of regimentation, since the cost to the patient would be less than under a plan of individual practice.

SOCIALIZED MEDICINE

I quote from an editorial appearing in the January issue of the *American Journal of Digestive Disease*. "If state medicine is adapted to America, the public now accustomed to a highly individualized approach, will be vainly looking for a commodity which will have been not only rationed but driven from the market. Fortunately, the only physician who will be benefited from such a system is the one now unable to make a living. All physicians under such a plan will be increasingly regarded not as teachers of humanity but their paid servants. From the vantage ground of the present moment it appears that

medicine soon will be helplessly entangled in the tentacles of socialistic bureaucracy. For those who have anything to offer in opposition to this modern gravity the time is now."

Perhaps our best weapon against this modern socialistic trend is through the medium of the National Physicians' Committee whose members urge us to indoctrinate our congressional representatives against all ill-considered schemes which must lead to unfortunate innovations. Every physician should acquaint himself with the splendid work this committee is doing and render both financial and moral support in this crusade to save the medical profession and protect the public from regimented medicine.

William Penn once said: "Governments like clocks go from the motion men give them; and as governments are made, and moved by men, so by them they are ruined too. Wherefore governments rather depend upon men than men upon governments." Time has not altered this statement, for members of congress and our state legislatures are but representatives of the electorate and it is only necessary that they be acquainted with the wishes of the people. The trouble has been that you and I and other citizens endowed with the God-given ability for leadership have failed through greed for the almighty dollar to assume this responsibility to our community, state and national government, and, last but not least, to ourselves.

"Of what avail the plow or sail
Or life itself, if freedom fail."
—Emerson.

Medicine today is at the crossroads, but with unity of purpose and thought and with a fearless leadership we can be guided to safety. It is not too late. To provide West Virginia physicians with this leadership, I have, with the consent of the Council, appointed nine men as a Fact Finding and Planning Committee who will study our many problems and responsibilities and from time to time report their findings and recommendations. These men have been chosen after careful study. They are men of ability, honest and fearless, and have a real interest in the welfare of West Virginia and of our profession. Both surgery and medicine have an equal representation, and care has been exercised in seeing that different localities in our state are represented. Members of this committee have willingly accepted the great responsibility, and it behooves all of us to support them in this arduous undertaking.

If we can save the medical profession from regimentation and protect the unsuspecting public from the evils of governmental control, then we can "live in a house by the side of the road and be a friend to man."

Dangers of Botulism in Home Canning

The dangers of botulism, particularly during the coming home canning season when many persons who never before attempted home canning will be preserving garden produce, are pointed out by *The Journal of the American Medical Association* for April 17. *The Journal* says:

"Meyer and his associates in California have gathered statistics on 367 outbreaks of botulism in the United States since 1899. Only 83 of the outbreaks have been due to commercially canned foodstuffs; wtih one possible exception, outbreaks have not occurred in nearly twenty years from this source. The other 284 outbreaks have been caused by foods canned in the home. The total cases of the disease for the forty-three years numbered 1,052 with 687 deaths, a fatality rate of 65 per cent. How many other unrecognized cases have occurred is unknown.

During the coming canning season many persons who never before attempted home canning will preserve garden produce. The danger from botulism is ever present unless proper precautions are taken. Faust, discussing methods of home canning, emphasizes the necessity of the pressure cooker with an accurate gage or thermometer for nonacid foods, such as string beans and corn. Any such foods that have been processed in any other manner must be reboiled for at least fifteen minutes before tasting or using. Any home canned food that shows the slightest evidence of spoilage should not even be tasted, for the toxin of the botulinus bacillus is the most powerful poison known.

OPERATIVE WOUND HEALING, ITS MANAGEMENT AND AN EVALUATION OF THE TECHNIC AND SUTURE MATERIAL EMPLOYED*

By ROBERT K. BUFORD, M.D., F.A.C.S., HUGH A. BAILEY, M.D., F.A.C.S. and JOHN C. CONDRY, M.D.
Charleston, West Virginia

THE conquest of disease and rehabilitation of human beings has always been one of the great romances in the evolution of the social order. Surgery, the queen of the arts, has played a leading rôle in this drama during the transition from the heroic to the physiologic era in medicine.

The advent of anesthesia, with its recent progress towards both safety and perfection, asepsis, the refinement of technic and the organization of teamwork have made it possible for every organ in the body to be explored and to receive necessary surgery.

A review of the historic and scientific background of this gratifying surgical achievement, however, reveals that it is not replete on so important a phase as the healing of operative wounds, a condition on which the very life of a surgically treated individual frequently depends. In fact, not until most recent times has this important fundamental been emphasized.

The surgeon's primary consideration in every operation is wound healing, and his ultimate goal is the attainment of uncomplicated healing. The treatment of wounds should form a fair index of a surgeon's training and ability. Every solution of the continuity of tissue is a physical, bacteriological and biochemical experiment.

In order to reach a beneficial conclusion based on fact, there must be a clear systematic classification of the various phases considered when dealing with operative wound management.

In preparing and following up this investigation the different phases considered have been classified under three headings: (1) preoperative preparation, (2) operative technic and (3) postoperative care.

THE AUTHORS

Dr. Buford, graduate Loyola University; interned George Washington Casualty Hospital, Robert Burns Hospital, and Sheltering Arms Hospital; Fellow American College of Surgeons; Past President West Virginia State Medical Association; member of the Founders Group of the American Board of Surgery; Member of American Society for the Study of Goiter; surgeon at Charleston General Hospital and other Charleston hospitals.

Dr. Bailey, graduate Medical College of South Carolina and University of Maryland; Postgraduate University of Maryland, Department of Surgical Anatomy; Fellow American College of Surgeons; surgeon at Charleston General Hospital.

Dr. Condry, graduate University of Maryland, 1927; interned Washington Hospital, Washington, Pa.; Postgraduate N. Y. Postgraduate Hospital; Harvard Medical School; Vienna and London; Internal Medicine, Cardiology; Lt. Comdr. (MC) USNR, in active service since 1941. ABOVE PARAGRAPH IS INCORRECT. FOR CORRECTION SEE p. 263

SEE p. 263

PREOPERATIVE PREPARATION

Adequate preparation of the patient before operation is essential for normal wound healing. It is of definite advantage to study the physiology and chemistry of the individual. The nutritional status cannot be ignored. Fluid and chemical balance must be restored if possible, and since the advent of blood banks and modern laboratories in well equipped hospitals, transfusions of blood and plasma are quickly and readily obtainable. Hematocrit, plasma proteins, etc., can be quickly determined.

* From the Department of Surgery, Charleston General Hospital, Charleston, West Virginia.

The operating personnel must be equipped with proper masks, gowns, gloves, etc. Every reasonable method to avoid contamination from the nose, throat and hands should be instituted. Organisms from these sources, especially from the nose and throat, are well known to be virulent and frequently lead to overwhelming infection of the wound in a relatively short time. Mason aptly states that these organisms are relatively immune to human antibodies and their growth in proper soil is rapid.

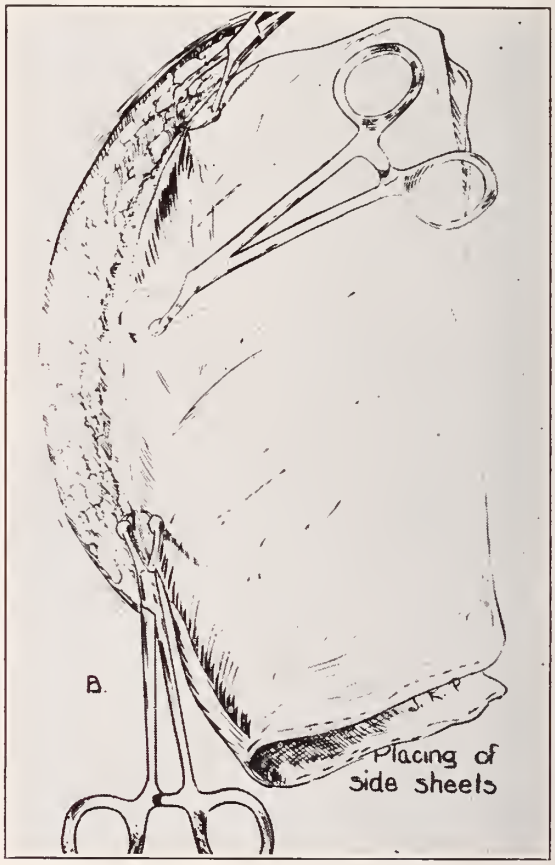
Instruments once sterilized may and do act as sources of contamination after a certain amount of use, and the practice of using, washing and drying and rinsing should be discouraged.

Postoperative infection with reference to air-borne contamination has been investigated. Air conditioning, canopies, filtration and ultraviolet lights are of definite advantage. This has been proved beyond question by Hart.

OPERATIVE TECHNIC

The refinement of operation technic has made the organization of teamwork almost imperative.

We are of the opinion that, in reality, there is no such thing as an aseptic wound.



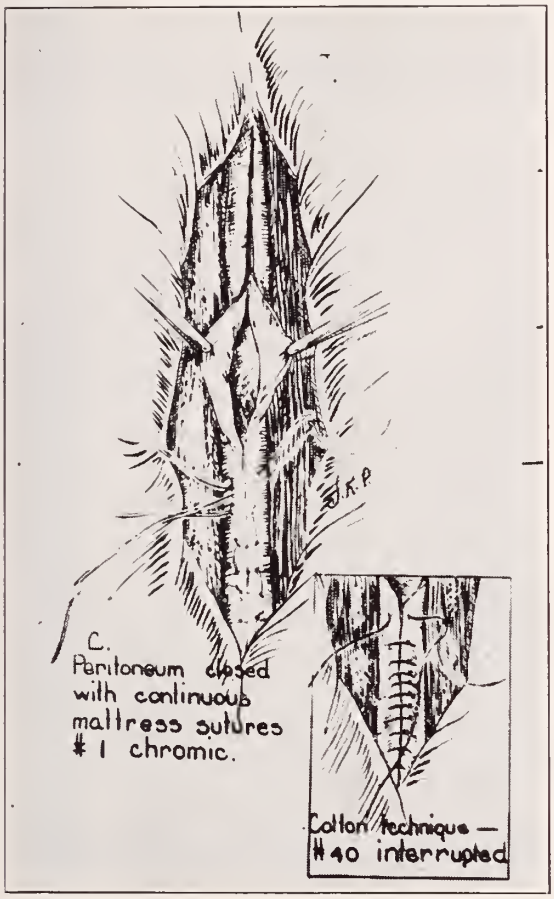
In dealing with the surgically ill, normal tissue reaction and resistance are frequently impaired, therefore too much attention cannot be paid to asepsis.

Primary wound healing is dependent upon several factors, especially adequate blood supply. The larger blood vessels should be protected as far as possible. In addition, the physiologic fluid and electrolyte balance of the blood must be maintained by judicious replacement and correction of cardiovascular disturbances.

Sterilization of the skin is an impossibility but with the ordinary antiseptics and cleansing materials of today, the operative site can be rendered relatively free from bacteria and the incision can be made with safety.

After the skin incision is made the apposing wound margins are protected with gauze and hemostasis may be effected at times solely by steady pressure of the hands. In this manner subcutaneous "ties" may often be entirely eliminated. (Fig. A).

The introduction of excessive foreign materials, such as gross amounts of tissue in clamps, ligatures, and sutures, leads to



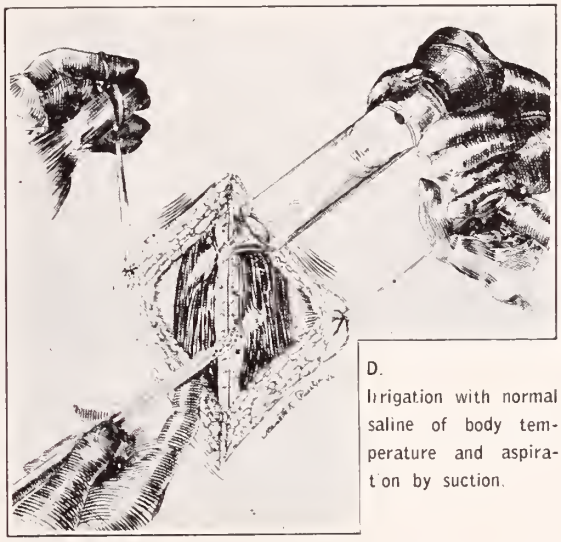
delayed healing. Careful hemostasis, however, remains one of our prime surgical principles and cannot be overemphasized.

The gentle handling of tissue is of paramount importance. Hand retraction is usually as effective and far less traumatic than that obtained by the use of metal implements. Sharp dissection offers a more kindly reaction than does blunt dissection.

Protection of the incision edges by means of warm, moist "side sheets" prevents their exposure to light and air, which is conducive to drying and devitalization, thus rendering the tissues far less resistant with a resultant impeding of the normal course of wound healing. (Fig. B).

SUTURE MATERIAL

We are unable to make a dogmatic statement concerning the superiority of one suture material over another with regard to subsequent wound healing as will be shown by the analysis of 1,027 consecutive major operative procedures presented in this paper.



D.
Irrigation with normal saline of body temperature and aspiration by suction.

Cotton sutures were employed in 730 cases, catgut in 288, and silk in 9. Silk was purposely not used extensively in this series. The investigations as to its reaction to tissue have been extensive. It is known that its virtues are many and its faults few. However, we find cotton to be a highly satisfactory suture—in our opinion, equal, if not superior to silk. We could find no particular fault with catgut when the same care was accorded it, as that of cotton or silk.

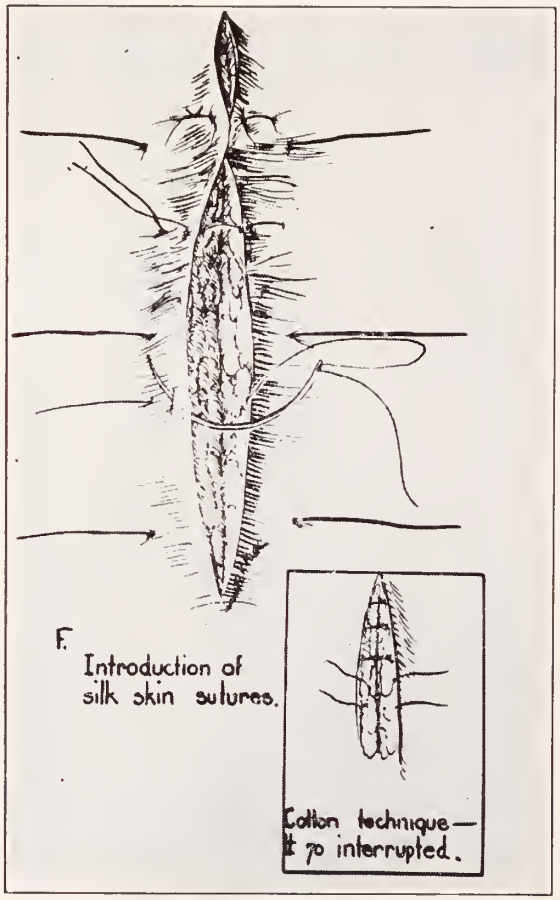
A critical review of this series will reveal that sterile, nonabsorbable materials of fine gauge probably result in less tissue reaction but on the other hand, may occasionally give rise to very persistent sinuses in the presence of even minimal postoperative infection.

To obtain a satisfactory result with cotton sutures they must be interrupted, single, of fine gauge, and used in accordance with the technic laid down by Halsted.

It is generally accepted that drainage is instituted only when there is no question as to its advisability. Our experience has taught us to employ a stab incision located somewhere beyond the confines of the operative incision for the egress of drainage material.

The peritoneum is closed tightly. (Fig. C). If this procedure is disregarded, patients come to grief at times from infection and disruption.

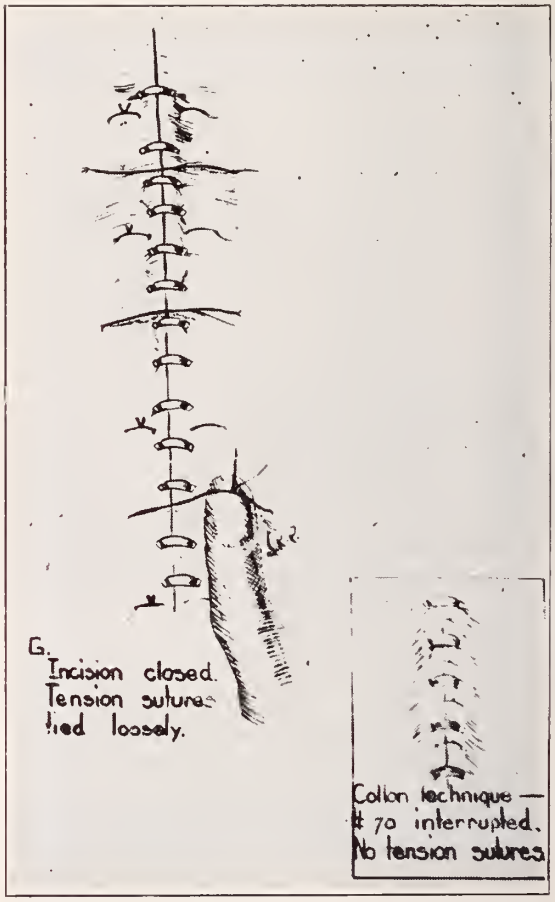
We are definitely convinced that the irrigation and aspiration of wounds following the closure of the peritoneal cavity is of inestimable value. (Fig. D). Warm physiologic saline solution is introduced into the wound under moderate pressure and is aspirated by



means of an electrical or compressed air sucker. This procedure definitely aids in cleansing the wound of debris, bacteria and blood clots. Trauma to the opposing structures does not occur and the tissues so treated are striking by their fresh appearance.

CHEMOTHERAPY

Real and potential infections are combatted with considerable success by the employment of the crystalline sulfonamides in the various layers of the incision and in the peritoneal cavity. We were convinced of the effective-



ness of chemotherapy several years ago when we first began using sulfanilamide crystals in wounds, infections, and the peritoneal cavity. Absorption is rapid and its bacteriostatic action outweighs, by far, the question of foreign body reaction. We are of the opinion, based on fact, that these agents do not interfere with the normal course of healing, and produce no untoward conditions in the peritoneal cavity which may be conducive to the formation of adhesions. All in all, we believe that they are responsible for many lives saved.

Anatomic approximation of tissues is imperative. There should be snug coaptation, but tight ligatures are unnecessary and harmful. Figures F and G illustrate the final steps in the closure of an abdominal wound.

POSTOPERATIVE CARE

In an attempt to attain uncomplicated healing of wounds there must be adequate blood supply to the injured area, as well as its immobilization or fixation.

We believe that in dealing with operative wounds of the abdomen, dressings should be applied, accompanied by a splinting of the abdominal muscles with adhesive tape or some other suitable material. Those cases so treated are lifted into a chair at an early date.

We are aware of the experimental proof of Lindhard and the substantiation of it by Asmussen, Christensen and Nielson of Copenhagen, and others, that the circulation rate is smaller in the standing and sitting positions than in the lying position. However, through the compensatory contraction of arterial vessels, and the increased pulse rate, the blood pressure is not diminished; thus the capillaries, both new and old, at the site of the injured area, are kept well supplied with blood.

This form of treatment is followed particularly in dealing with the aged or those beyond middle life. By its use there is an effort exerted to prevent hypostatic pneumonia, the incidence of thrombosis and emboli might possibly be reduced, and we believe it to be less hazardous and wearing in cases of elderly patients than the practice of turning them from side to side at frequent intervals. In this light the aforementioned principles seem reasonable and physiologic.

This phase of postoperative care has now been pursued in a sufficient number of cases to permit us to arrive at a conclusion based on experience. There have been no fatalities, no disruptions, no demonstrable hernias and no evidence of an increase in infections. According to our records there is a lowered incidence of complications, both local and systemic.

Patients in their sixth or seventh decades are usually gotten out of bed within twenty-four hours after a major abdominal operation.

Every surgeon is now convinced that contamination can be avoided to a certain extent by infrequent dressings.

Decompression of the gastro-intestinal tract by the introduction of the Miller-Abbott or duodenal tube after the method of Wangensteen is an adjunct second to none in combatting the various forms of ileus and persistent vomiting. This form of therapy has largely supplanted enterostomy, which, at its best, is unsatisfactory. It is true that tracheitis, esophagitis, ulceration and pneumonia occasionally develop in the wake of these appliances, but all in all, their good qualities outweigh the unpleasant ones.

DISTENSION AND VOMITING

Evisceration, delayed healing, infection, and postoperative hernia are excellent examples of what distention and vomiting are capable of doing. We, as well as all others, agree that distention and vomiting can be more easily prevented than controlled. Early attack on them is advocated. By so doing these complications may be brought under control at an earlier date and the depleted physiological activity of the intestines and the drainage to their circulation may be prevented.

Oxygen in high concentration is of definite value.

Small doses of pitressin have, in our experience, been of noticeable aid. The effect of prostigmin is of longer duration and it is probably more efficacious. These drugs, however, in the presence of mechanical ileus, are capable of doing much harm.

In comparatively recent times it has come to light that the physiology, chemical balance and the various vitamins also occupy an important place in regard to wound healing.

It is well known that vitamin C plays an important rôle in the restoration of the intercellular structures of divided tissues. This particular vitamin is but little stored in the body and its need is increased in certain diseased states. It is fairly well established that a low ascorbic acid level may be responsible for wound disruption. Vitamin A has its most pronounced local effect on epithelial structures. Vitamin B is an important growth stimulator and aids in controlling the tone of

the gastro-intestinal tract and in regeneration of red blood cells. Vitamin K has to do with the rising of the blood prothrombin level.

As has been said before, as a final factor in wound healing, the general nutritional state of the patient must be considered. Carbohydrate and protein metabolism must be maintained. The poor nutritional state, of which hypoproteinemia is a manifestation, may predispose to impaired healing and disruption.

During a period extending from September 1, 1940 to January 1, 1942 we have compiled a series of cases concerning operative wound healing. This series consists of 1,027 consecutive major operative procedures performed on the surgical services of Dr. John E. Cannaday and the writers at the Charleston General Hospital. These cases were closely observed during and after operation. In none was any drainage material used through the original incision. For this purpose stab incisions were employed.

This series is tabulated in tables A, B, C and D.

TABLE A
Clean Cases

	Number of cases	Number in which infection occurred	
Total	918	10	or 1.1%
a. Cotton	644	6	0.93
b. Catgut	265	4	1.50
c. Silk	9	0	
Irrigation	810	6	
a. Cotton		3	
b. Catgut		3	
Sulfonamides	202	3	
a. Cotton		1	
b. Catgut		2	

NOTE: Mentionable complications which occurred in four (4) cases but which had no apparent effect on wound healing include: Two stitch abscesses, on subcutaneous hematoma and one serous pocket.

In Table A, there are reported 918 clean cases. Of this number infections occurred in 10, or 1.1 per cent.

(a) Cotton sutures were employed in 644 of this particular group and there were six infections, or .93 per cent.

(b) Catgut was used in 265 and there were four infections or, 1.5 per cent.

(c) Silk was the suture of choice in 9 cases, with no infections.

Irrigation was made use of in 810 and of these 918 cases with a resultant infection of six. Of these six infected cases cotton was used in three and catgut in three.

The powdered sulfonamides were introduced into the wounds of 202 of these cases and there were three infections. Cotton was used in one of these three incisions in which infection developed, and catgut in two.

These 918 cases included various operations on the female pelvis, cholecystectomies, gastric and small bowel resections, splenectomies, herniotomies, thyroidectomies, etc.

We believe that cotton or silk is probably more secure than catgut but that this is mainly due to the entirely different technic employed by so many operators when dealing with catgut.

TABLE B
Contaminated Cases

	Number of cases	Number in which infection occurred	
Total	73	6	or 8.2%
a. Cotton	59	2	3.4
b. Catgut	14	4	28.6

Irrigation and the sulfonamide crystals or powder were used in all cases.

NOTE: In one case (cotton) a subcutaneous hematoma developed which was evacuated surgically and afterward healed uneventfully.

In Table B there are recorded 73 contaminated cases. Infection occurred in 6, or 8.2 per cent of this group.

(a) Cotton sutures were employed in 59, of which infection occurred in two cases, or 3.4 per cent.

(b) Catgut was used in 14 and in this group there occurred four infections, or 28.6 per cent.

Irrigations and the sulfonamide crystals or powder were used in all.

In one case in which cotton was used a subcutaneous hematoma developed which was evacuated and the wound healed uneventfully.

These cases classified as contaminated or potentially infected included such pathological conditions as phlegmonous and gangrenous appendices without gross perforation but with local peritonitis, free fluid, and many positive peritoneal cultures, ruptured viscus,

large bowel resections, intraperitoneal abscesses, etc.

TABLE C

Infected Cases

	Number of cases		Number in which infection occurred	
Total	36		22	or 61.1%
a. Cotton		27	16	59.3
b. Catgut		9	6	66.7

Irrigation and the sulfonamide crystals or powder were used in all cases.

NOTE: Drainage was carried out in most of the above cases; in all but two through accessory stab incisions. The latter two developed gross wound infections (catgut).

In Table C there are recorded 36 grossly infected cases. Of this number there were 22 infections, or 61.1 per cent.

(a) Cotton was used in 27 of these cases with 16 subsequent infections, or 59.3 per cent.

(b) Catgut was used in 9 with 6 infections, or 66.7 per cent.

Irrigation and the sulfonamides were used in all. Drainage was carried out in the greater number of the above cases.

These grossly infected cases included old ruptured viscus, ruptured appendices and gallbladders, bullet wounds of the abdomen, etc.

The contaminated and the infected cases numbered 109, or 10 per cent of the entire series. The total number of wound infections was 28, or .25 per cent.

TABLE D

Total Cases

	Number of cases		Number in which infection occurred	
Total	1,027		38	or 3.7%
a. Cotton		730	24	3.3
b. Catgut		288	14	4.8
c. Silk		9	0	
Irrigation	919		34	
a. Cotton			21	
b. Catgut			13	
Sulfonamides	311		31	
a. Cotton			19	
b. Catgut			12	

In Table D, the entire series of 1,027 recorded cases is shown. Ninety-eight per cent of these 1,027 cases healed by primary intention thus giving a total of 96.7 per cent of cases with uneventful healing, leaving 3.7 per cent infections.

(a) Cotton sutures were employed in 730 of the 1,027 cases and of these there were 24 infections.

(b) Catgut was the suture of choice in 288 and of these there developed 14 infections.

(c) Of the 9 cases in which silk was used there were no infections.

The incisions of 919 were irrigated and aspirated, of which number there were 34 infections. Of these 34 infections, catgut was used in 13 and cotton in 21.

In 311 cases of this total series, the sulfonamides in crystal or powdered form were introduced in the incisions and the peritoneal cavities. There developed 31 infections. Of these 31 infected cases cotton sutures were used in 19 and catgut in 12.

It must be stated again that troublesome sinuses do develop occasionally as a result of employing nonabsorbable buried sutures. In this series there were six such instances. We believe that these unfortunate happenings can be largely prevented or diminished by employing fine material and following out the Halsted principles.

SUMMARY

The management of operative wounds has been considered from the standpoint of (a) preoperative preparation, including a correct evaluation of the nutritional and chemical state of the patient, the proper control of the environs, instruments, etc., (b) operative technic with special emphasis on the irrigation of all operative wounds and the introduction of sulfonamides and (c) postoperative care of the patient and the wound.

A careful analysis of 1,027 consecutive operative wounds has been tabulated.

Legs Safety Factor for Heart

Discussing recently reported investigations which showed little effect on the hearts of normal persons from rigorous participation in various sports, *The Journal of the American Medical Association* for May 29 says that "Perhaps it is safe to believe that in the majority of instances the legs or other elements of the musculoskeletal system would tend to give out before the heart, thereby serving as a factor of safety."

THE PHENOMENA OF NORMAL SENESCENCE*

By WALTER E. VEST, M. D.
Huntington, West Virginia

What is it to grow old?—Matthew Arnold.

Is there a normal physiological senescence with a gradual decline of the organism which produces increasing weakness and disability, intrinsic in origin, involutionary in nature, and ultimately resulting in death? Or are the changes incident to the ageing process and ultimate death invariably the result of factors essentially extrinsic, the toxins, infections and other disease processes, inimical environment, faulty habits, and traumata to which the individual has been subjected? In other words would man, assuming an ideal heredity and in contact with only an ideal environment, live on indefinitely achieving individual biological immortality? Scientific students of the problem differ, and the genesis of senescence is, in the present state of our knowledge, a moot question.

As an exponent of the theory that ageing is an inevitable process, and essentially physiologic, Warthin holds that "the union of the sperm and ovum marks the charge of the individual energy machine; that energy charge is expended at a constantly diminishing rate through the period of growth and development until maturity is reached, and after this it declines still more rapidly until the machine finally comes to a standstill. This termination of the activities of the protoplasmic energy machine due to the loss of its intrinsic energy, independent of the action of extrinsic forces, is normal or biologic death, and the period of its activity, the biologic life limit. * * * The senescent process is potent from the very beginning. * * * Evolution and involution are inseparable processes and go hand in hand from the time of the union of the sperm cell and ovum.

THE AUTHOR

Dr. Vest, graduate Medical College of Virginia, 1909; interned Memorial Hospital, Richmond; Chief Medical Service, Chesapeake and Ohio Hospital, Huntington.

* * * Involution is a biologic entity equally important with evolution. * * * Its processes are as physiologic as those of growth. * * * Senescence and old age (are not) disease processes, * * * but * * * a physiologic entity, the result of involution processes inherent in the organism. * * * (The senescent process) is, therefore, inherent in the cell itself, an intrinsic, inherent, inherited quality of the germ plasm, and no slur or stigma of pathologic should be cast upon this process. * * * (Ageing)is due primarily to the gradually weakening energy charge set in action by the moment of fertilization."

On the other hand, Tilney, in discussing the ageing of the human brain, holds that ageing is essentially pathologic. He says: "No evidence thus far adduced is sufficient to convince us that there is such a thing as a strictly old brain. The brain in aged people may present certain morbid changes, but these are in their turn incident to many pathological assaults upon the tissues sustained during life which, in some individuals more, in others less, are in all alike the consequence of infections, intoxications, or other morbid influences. * * * All of this is a strong argument in favor of the theory which holds old age in the brain, as in other organs, to be the result of life's successive and cumulative intoxications. * * * According to this view, old age has a pathological background. It arises from definite conditions which may be combated or corrected."

While the first specific fact in ageing or involution is the loss of the tail of the

*Read before the Southwestern Virginia Medical Society, Pulaski, Virginia, April 30, 1942.

spermatozoon after the sperm cell has penetrated the ovum, and although there are a number of minor involutions during the evolutionary process of an individual, we usually look upon senescence as beginning with the first downward swing of the life curve. This usually is in the fifth decade in the female and in the sixth in the male. G. Stanley Hall defines the term senescence as "the last half of life." The menopause definitely marks the beginning of ageing in woman, but the senescent onset is not nearly as well defined in man.

A major difficulty in the evaluation of the purely physiological and involutional aspects of ageing is the problem of knowing where the normal ends and the pathologic begins. This is due, of course, to the fact that such a large percentage of aged persons upon examination show actual definite morbid processes.

RATE OF AGEING PROCESS

Let us consider the phenomena incident to the ageing process. It is perfectly obvious that chronological age and physiological age do not advance pari passu. One individual at seventy may be well physically and keen mentally while his neighbor who has existed the same number of years may be hopelessly senile. Likewise it is generally admitted that the ageing process does not progress at an equal rate in all the organs of an individual. One organ may be to all intents and purposes in the state normal to maturity and another in the same individual essentially senescent. The greatest single individual factor in longevity is, of course, heredity. While an individual may influence very materially his own life span, and can modify to some extent the tendencies transmitted to him in his germ plasm, he cannot by good habits and intelligent control of his environment entirely avoid all unfavorable consequences of his biological heritage. Other factors, all environmental, which influence longevity and the ageing process are: The socio-economic status, occupation, literacy, marital state, religion, geographic locality of abode, personal habits, personal hygiene, adequate diet, and proper medical care.

What are the functional and structural changes incident to senescence? In the present state of our knowledge, these are not at all well known because the study of the ageing process has been far too inadequate. However, enough of these phenomena are definitely understood to provide a substantial groundwork for the science of gerontology, but much more investigation of the subject is necessary.

THE SKELETON

There are some general bodily changes which are noted in the ageing process. For instance there is a gradual diminution of height with onset at about 40 and a gradual increase to 75, after which a definite acceleration takes place. This height loss phenomenon is less marked in women than in men. The spinal column becomes more sharply curved probably due to two factors, the gravitational pull, and the normal tendency for flexion to exceed extension. There is a tendency to gain in weight in late middle life, but after 70 there is a definite weight diminution due chiefly to the loss of water content.

In addition to the diminution in height, the skeletal system shows other changes as well. Probably the most easily demonstrated of the bony phenomena is the change in the symphysial face of the pubic bone. In early maturity the transverse billows are limited to the internal area of this face, but by 50 a beaded rim has developed on the margins and as age advances the entire facial surface becomes irregularly roughened. In the skull the grooves for the meningeal veins shows a deepening and a sharpening of margins as age increases, and the cranial sutures become indistinct or disappear entirely. The conformation of the face and skull may change, especially in the atrophy of the alveolar process which goes on rapidly after the loss of the teeth, and Hrdlicka holds that "the nose grows with age in both length and breadth." The scapula after 50 changes in structure so that the deep vascularity is no longer dis-

tinguishable by transmitted light. As age advances the lines of tendinous insertions become more evident and between them are irregular spots of bone atrophy, and under transmitted light the bone appears patchy and spotted. The beaded rim of the articular margin of the glenoid becomes sharp-lipped. Halisteresis, or demineralization, begins in the feet, hands and scapulæ, but later extends to most of the other bones of the body. With demineralization comes a change in the collagenous matrix. Wetzel believes that there is a definite increase in the number of collagenous fibers. There is loss of water content and, as these changes increase, the bones become correspondingly more brittle. The marrow shows a gradual increase of the yellow at the expense of the red.

THE TEETH

Physiologically the teeth should last until about 65. Normally the clinical crown is maintained at a constant height, atrophy of the alveolus and gingiva paralleling attrition of the occlusal surface, showing a continuous eruptive process tending to a final exfoliation of the teeth. The enamel becomes soft as age advances, but its specific gravity increases as does that of the entire tooth. The percentage of lime salts increases while the water and organic materials decrease. The pulp atrophies, the syncytium of fibroblasts gradually becoming fibrous tissue with a reduction of blood vessels and nerve filaments. The peridental membrane gradually becomes thinner and atrophies.

Very early in the ageing process is the transformation of hyaline into fibrous cartilage. After 60 the intervertebral discs show a penetration of connective tissue and blood vessels, and become contracted and thinner. Elastic cartilage becomes more fibrous with advancing age and diminishing in elasticity, but does not calcify. Todd says that the costal cartilages always show at least some calcification by 40. Certainly after that age they show a diminution of water content and an increase in calcium content. The joint cartilages lose water and atrophy.

The tendons show no age changes, but the origins and insertions of muscles show an increase of bony tissue at the actual site of attachment as is evidenced by more definite insertion ridges. Todd believes that ligaments do not show evidence of ageing, but Warthin holds that both ligaments and joint capsules undergo dehydration and become less elastic, firmer and drier, resulting in the well known phenomena of restriction of motion and stiffness of joints. The synovial membranes and bursæ apparently show no changes from ageing per se.

THE SKIN

The skin is the open book of ageing and he who runs may read the inscriptions written there by the ruthless hand of Time. The signs of ageing begin to appear in the skin at about 40. The first change is atrophy and degeration, the atrophy being "the essential atrophy of unexplainable decadence", and is apparently due to dehydration which is a common factor to most senescent changes. Disuse is not a cause. Neither is hyponutrition for even in the presence of arteriosclerosis there is no evidence of insufficient blood volume of the skin. The collagenic bundles and elastic fibers show basophilic degeneration and the latter undergo fragmentation and may entirely disappear. The epidermis atrophies, the subcutaneous fat pad becomes thinner, and the subepidermal connective tissues flatten out, giving the skin a smooth shining appearance, with the development of wrinkles and folds. The wrinkles are probably more due to the loss of elasticity than to any other factor. The sebaceous glands show degeneration and become smaller although their pores are more obvious. The hair of the scalp atrophies but the hairs of the male beard increase in diameter throughout life. Senile bristles appear in the nostrils, the external ears, the eyebrows, and here and there on the nose, especially in the male. Baldness is at times a senescent phenomenon, but most often hereditary or due to definite disease conditions. Graying is a pigment ageing change atrophic in character. Neither

baldness nor graying, when only one is present, is of special significance, but the white-haired baldpate is usually well advanced in biologic age. Dryness and roughness of the skin are common. The melanin of the epiderm is slightly increased, accounting for the anemic appearance often seen in the aged, the so-called "patriarchal pallor." The pigment deposit is increased and freckles are more common than in youth. Pseudo-hypertrophy of toenails is practically always present and, there is a slowing up of nail growth less marked in the fingernails.

The functions of the skin become impaired as ageing progresses. The heat-regulating mechanism is upset and extremes of heat and cold are poorly tolerated. The chilliness of the aged is proverbial. This disturbance of thermotaxis may be due, of course, to the decreased output of perspiration resulting from the atrophy of the skin and a partial degeneration of the sweat glands. Pruritus is common and the sebaceous secretion apparently declines approximately parallel with the decline in the sexual function. The water-storing function is definitely decreased, and the arsenic content of aged skin is approximately double that of early maturity. The self-sterilizing property of the skin decreases roughly parallel with the decrease of sebaceous secretion.

THE MUSCLES

Smooth muscle is generally believed to show no intrinsic age changes. Striated muscle, on the other hand, shows a thinning in the size of fiber, and a changed direction of the myofibrils. The latter are in maturity parallel, but as age progresses they become oblique, spiral, and even annular in disposition, but no change appears in the reticular sheath of the fiber. There is an increase in collagenous fibers and in pigmentation and an increase of elastic fibers about the bundles of the myofibrils. In extreme age brown atrophy and fatty infiltration occur. After 60 the muscle bulk is reduced and the roentgen shadow shows a decreased density. The function begins to regress earlier than does the structure. Some muscles begin to decline from the maximum strength after 30, and all do by 60, and a dwindling of the power of sustained effort sets in after midmaturity. The functional decline is most in strength and least in speed with dexterity occupying a mid-position in the scale of decline. Some observers believe, however, that the diminution in function is due to cerebellar age changes rather than to actual muscle change. Clinically, senescent muscle shows an increase in water, chloride, total base, sodium and calcium, and a decrease in potassium, magnesium, phosphorus, nitrogen and ash. This would suggest a decrease in intracellular fluids containing potassium and protein and an increase in intercellular fluid containing sodium and chloride.

THE DIGESTIVE SYSTEM

While the digestive system does show senscent processes, unless definite disease is present these changes do not cause as marked an effect upon the general well-being as do the changes in some of the other organs. In other words, most old people die with a digestive system which, unless it is the seat of definite disease, could function fairly satisfactorily beyond the ordinary life span.

The salivary glands definitely atrophy as ageing proceeds. The most marked degenerative changes are found in the cells lining the intermediate ducts, the cells which secrete most of the water content of the saliva. This is believed to account for the lessened volume of saliva and the frequent complaint of dryness of the mouth among the aged. The glands show large cells with acidophilic granules in the cytoplasm and pyknotic nuclei. These cells are very rarely found before maturity but in the eighth decade are constantly present. The amount of ptyalin secreted is definitely diminished after sixty, but the pancreatic amylase content of the duodenal fluid, although somewhat diminished, is maintained at a sufficiently high level to afford satisfactory carbohydrate digestion. The tongue shows a loss of papillæ. Both fungiform and filiform varieties are

reduced in number and the latter may be entirely lost. The number of taste bulbs after 75 is approximately only one-third the number present at 25 with a consequent diminution of taste. The mucous membrane of the entire mouth may appear thin and present a glistening appearance. There is a weakening of the muscular mechanism of swallowing. The stomach maintains its normal weight until extreme old age, but after 80 does show a definite decrease in weight. The acid secreting power of the stomach decreases as age increases and there is a definite increase in the incidence of achlorhydria with advancing age, approximately one person in three of those beyond 60 not secreting hydrochloric acid after a meal, and one in four failing to respond to histamine stimulation. The gastric emptying time has been thought to be speeded up with age, but Van Liere has recently shown that there is no essential difference between this function in apparently normal old men and young healthy adults. The normal senescent who eats a proper diet does not complain of "dyspepsia", and, if digestive symptoms are present, generally an actual morbid process is likewise present. After 60 the appetite is usually progressively lessened and increasingly capricious, and there is a lessened gastric hunger motility. The appetite changes may be due, of course, to the diminution of taste.

THE PANCREAS

The pancreas decreases somewhat in weight after 60, and there is a decrease in its vitamin C content. The volume of pancreatic juice probably does not show a marked diminution. The proteolytic activity is very definitely diminished, while the lipolytic and amylolytic functions show but slight decrease. The lipocaic and the insulin hormones from the islets may be somewhat diminished, but this is not definitely proven, and unless definite islet disease is present, the amount of these two secretions is sufficient for the individual to carry on. After 60 the incidence of the onset of diabetes is definitely lessened. The blood sugar curve is flattened showing a slower rise, a lessened height and a slower fall than in maturity. There is apparently a diminution of the ability to use and store glucose, and the renal threshold is somewhat elevated.

At 75 the liver has lost approximately 15 per cent of its maturity weight but shows no increase in connective tissue content. The hepatic safety factor is so large, however, that liver function is entirely adequate although the bilirubin content of the blood serum is increased. After 45 the ascorbic acid content of the liver shows a definite decrease. The gallbladder shows no specific ageing change and, unless disease is present, there is no diminution of the emptying time. However, we know clinically that the incidence of all types of cholecystic disease increases with advancing age. The weight of the small intestine apparently begins to decrease in the fifth decade, and in advanced age the mucosa probably undergoes atrophy. The appendix shows a diminution of lymphoid tissue and a tendency to undergo lumen obliteration, beginning at the tip and gradually extending toward the base. The colon apparently becomes thinner and atonic as age progresses. The increase in diverticulosis with advancing age would indicate this, and the fact that diverticula can be produced experimentally by distending the autopsy specimen of the senile colon but not in that from young persons would seem to prove this. Constipation, contrary to popular impression, is apparently not an age phenomenon, for the constipated aged are those who have been constipated before the onset of senescence.

THE RESPIRATORY SYSTEM

The nose shows dehydration in the connective tissue and regressive changes in both collagenous and elastic fibers. Senile bristles develop in the nostrils, especially in the male. There is a gradual atrophy of the nasal mucosa, with an accompanying change in the mucous and serous glands. The cilia becomes less effective which hampers the eliminative function. In the female the cavernous tissue regresses. The olfactory apparatus undergoes

atrophy throughout life with destruction of the olfactory cells of the mucosa. At 75 this process shows a 70 per cent atrophy. The pharynx shows a tendency to drying, probably because of the diminution in the volume of saliva secreted, and the tendency to mucosal atrophy. The sensitivity of the pharyngeal mucosa is lessened and the gag reflex less responsive. The larynx in maturity is on a level with the bottom of the fifth cervical vertebra, but gradually sinks, reaching the level of the third dorsal in the seventh decade. The laryngeal mucosa atrophies and the muscles undergo the senile changes characteristic of striated muscle, most complete in the abductors. The elastic tissue in the vocal ligaments becomes impaired. Due to all these changes the voice becomes quavering and high-pitched, the so-called senile voice. The chest wall gradually becomes less mobile, the respiratory excursion is diminished, the diaphragm gradually becomes lower, and the vital capacity is diminished, at first slowly, but after 60 more rapidly, showing on an average a 50 per cent decrease after 70. There is an increase in residual air and a prolongation of expiration. The lungs gradually shift downward as the level of the diaphragm becomes lower, and the bifurcation of the trachea likewise becomes lower, as do the apices, the bronchial stems and lung roots. Between maturity and sixty the lower lung border sinks the width of one intercostal space. This sinking process, which is probably a result of the gravitational pull, is at first slow, but the rate is accelerated with the increase in age. The aged lung is usually dull and grayish in color, does not collapse so promptly nor so completely as in youth, shows a moderate aveolar emphysema in the anterior margins, and some lessening in weight and size. The elastic tissue has undergone some degeneration, and crepitation is diminished. The visceral pleura is thin, dry and opaque, and has lost much of its lustre. The cilia become enfeebled, the goblets cells atrophy and the volume of their secretion is lessened. Hence there is a decrement in the broncho-eliminative function. The lymphatic tissue in the lung does not show regression as does lymphatic tissue elsewhere in the body, but actually increases throughout life. Aside from some degree of dehydration the connective tissue in the lung undergoes no change, but the elastic tissue loses some of its "life", its action is slowed down, and the evacuation of the air is less efficient. The respiratory rate is lowered and the pain sensitivity is lessened probably due to the progressive decrease in the myelinated nerve fibers in both dorsal and ventral roots of the thoracic nerves supplying the lungs.

THE CARDIOVASCULAR SYSTEM

The heart gradually changes from a near central position in the chest to the left, and from a more or less erect position to one that is more nearly horizontal. Its bulk increases with age. Subpericardial fat accumulates, especially along the coronary grooves. The valves lose their pliability and show an increase in fibrous tissue. Their elastic tissue changes in quality, they may show calcium deposits, and they become stiffer and show less exact approximation. The mitral and aortic valves, being subject to greater strain, show a greater degree of change than do the tricuspid and the pulmonary. The fibrous quality of the left auricle increases. The striated fibers of the myocardium undergo modification but show no numerical diminution. The size of the individual fibers lessen and the striation, especially about the nuclei, tends to disappear. The lipochrome pigment present at the nuclear poles in early life increases in amount. The nuclei increase in size and become irregular in outline. The coronary arteries show intimal and medial changes but very rarely show calcification. The heart rate tends to become slower and the rhythm to show irregularities, usually extrasystoles. After 60, the exercise response, as measured by the acceleration of the heart rate, shows a decrease of approximately one-sixth in comparison with that of maturity. Pressure over the carotid sinus shows a greater cardiac response as age advances, while the

atropine response decreases. The electrocardiogram shows a tendency to left axis deviation and to an inversion of T_3. The voltage tends to become lower and the QRS complex in L_1 to become intricate. The PR interval lengthens with age. The aorta shows a loss of elasticity although there is no loss of elastic tissue. The staining properties change as does the form, and one of the early ageing changes is the fact that the chest roentgenogram shows a slight widening of the shadow of the arch. The arteries springing directly from the aorta show greater changes than do those in the extremities and those of the heart and brain more than those of the other viscera. The actual vascular changes are a thickening of the intima, and a loss of elastic and muscular tissue in the media with a collagen replacement. There is no uniformity of change in the different arteries of an individual, or even in the same organ, but generally the arteries of the heart and brain show the most intense changes and those in the periphery the least. The rate of advance of the pulse wave through the arteries increases with advancing age. There is a gradual rise in systolic blood pressure without a corresponding diastolic increase. Except for those in the renal glomeruli, which are known to atrophy and become hyaline, the fate of the capillaries is unknown.

THE BLOOD

The titre of agglutinins, isoagglutinins, and lysins begins to fall in early maturity and shows a steady decline, reaching a very low level in advanced age. Apparently there is a decrease in antibody formation also. The degree of agglutinability of the red cells is not changed in the ageing process. The specific gravity of the blood decreases as does the serum calcium, but the refractive index, total nitrogen, lactic acid, indoxyl, urea and serum bilirubin increase. The blood sodium content shows no change with age. We have been unable to find in the literature any reference to the effects of ageing on the blood cells, but from observation we have ourselves recently made, we doubt that there are any except that the numerical leucocyte response to infection probably decreases as age increases.

THE KIDNEY

The senile kidney shows a moderate reduction in weight and a diminution in size of the tubules due apparently to a reduction in their epithelial cells. A mild degree of vascular sclerosis is present showing a thickening and hyalinization of the vessel wall. Some of the glomeruli regress and disappear so that by 70 only two-thirds of the number found in early adult life remain. Much of the blood formerly passing through the glomerulus now finds its way directly to the tubule which may account for the tendency to fixation of the urinary specific gravity in the aged. Nocturia is usually present and there is a lowered urea clearance but without an abnormal increase in blood nitrogen. A slow elevation of blood pressure is found with increasing age, but this does not become pathological unless there is sufficient vascular change to produce renal ischemia.

After 65 the spleen shows a gradual decline in weight. The lymphocytic tissue in the malpighian follicles shows a corresponding percentage decrease.

The outstanding milestone of beginning senescence in woman is the climacteric which embraces all phenomena incident to the "change of life", the menopause, the vasomotor symptoms of hot flashes and chills, the nervous irritability, emotional upsets, headaches, languor, depression, and the atrophy of the genitalia. The anatomical atrophic changes are usually gradual but extensive, and involve the vagina, uterus, ovaries, breasts, and to a lesser extent the ovarian tubes. As a part of the climacteric and resulting from ovarian atrophy the secretion of ovarian hormone definitely wanes, while the pituitary hormone which stimulates the ovarian follicles increases. The amount of estrogenic hormone in the urine shows a definite decrease. The genital skin may show an extreme atrophy, and the vaginal mucous membrane may likewise show a marked

atrophy, much lessening of mucoid secretion, and a smooth, dry glistening appearance. With these changes comes an increasing diminution of the sexual function, although sexual relations may be indulged in and orgasm experienced, but the latter phenomenon occurs with diminishing frequency as age advances. It is probable that the ovarian atrophy is the primary cause of the involution of the other genital organs, or at least many of the symptoms of the climacteric can be ameliorated by substitution therapy, although this does not, at the most, do more than slow up the genital involutionary process.

The placenta at birth is definitely an aged organ. It shows loss of elasticity of vessel walls, arteriosclerosis with obliteration, necrotic patches, fibrosis, atrophy and degeneration of chorionic villi, and calcification. In other words, it has lived out its life span and has undergone a normal senescence.

THE MALE GENERATIVE ORGANS

The tubule of the testis shows an increase in connective tissue of the tunica propria which is usually associated with a decrease in the size of the tubule. This sclerosing process is gradually progressive, but the spermatogenic function remains relatively active. While the interstitial cells appear to show a numerical decrease after 50, the only intrinsic age change seems to be pigmentation. The pigment, which is found not only in the interstitial cells, but in the efferent tubules of the testis, the seminal vesicles and the smooth muscle of the prostate as well, occurs as round, golden brown granules which are very abundant in the interstitial cells. In the efferent tubules this pigment is found in the stroma, in the epithelium, free within the lumen, and at times in the semen, suggesting that it is an excretion. The prostate shows normally a slight but progressive increase in size from maturity on, but with only a total increment of 2 to 3 cc. of tissue volume. At about 40 the stroma begins to show an atrophy of smooth muscle with a corresponding increase in connective tissue. The epithelial cells of the acini become more cuboidal in type. This atrophy is irregularly distributed throughout the gland. By 60 the acini have undergone change in shape becoming slit-like in outline, and during the succeeding decade may become completely atropic and replaced entirely by connective tissue. Corpora amylacea increase in size and number as the atrophy advances. Secretory activity of both prostate and seminal vesicles is diminished, and there is a decrease in the volume of the androgen excreted in the urine. The sexual urge and power wane and copulatory frequency diminishes. Despite these age changes, spermatogenesis may continue above 90 and power of erection and copulation may persist until very late in life. Decrease in fertility with increase in age is a matter of common knowledge and statistically proven by the fact that only 0.7 per cent of fathers in the United States are 55 or over at the time of birth registration. Except in very rare instances there is no definite syndrome constituting a male climacteric corresponding to this epoch in the female, although the urine usually shows a high titre of gonadotropins and a decrease in the sex hormone output coincident with the wane in sexual activity.

THE EYE

The ageing changes of the eye have been studied more carefully than those in any other organ. After 50 there is a loss of orbital fat producing enophthalmos, and the convergent excursion is lessened with a resultant tendency to exophoria. The eyelids become thinner and less elastic and the upper lids tend to droop. There is a steady decline in visual acuity as age increases. The area of the visual field is progressively narrowed; the rapidity of dark adaptation is slowed up; there is an elevation of the minimal threshold of light perception; visual acuity in dim illumination is less in proportion than in maturity, and the critical speed of flicker is reduced. In other words, all the measurable visual functions of the eyes decrease with the progress of senescence. As the capillaries of the ciliary processes become hampered by

the increase in density of the surrounding interstitial tissue, the lens, which is dependent upon these capillaries for nutrition, becomes dense and its capsule becomes correspondingly dense, thicker and less permeable. The lens grows continually throughout life, but its growth rate becomes steadily slower without ever reaching zero unless it becomes cataractous. As age increases the power of accommodation decreases and Bernstein holds that a definite correlation between accommodation and longevity exists. The conjunctiva becomes thin and friable and there is a tendency to dilatation of the conjunctival veins. The lymphoid tissue is lost or atrophies and hyalinization of the subepithelial connective tissue occurs. The cornea shows a tendency to loss of lustre and transparency and undergoes a certain degree of dehydration. The corneal fibers become somewhat thicker. The periphery shows a lipoid deposit, the so-called "arcus senilis." In addition to the visible corneal arc, there is an infiltration of lipoid material in the sclera, in Bowman's, Descemet's, and Bruch's membranes, with a perivascular infiltration in the iris and a subepithelial deposit in the ciliary body. Whether this is an ageing or a pathologic process is doubtful. The fact that it can be produced in the rabbit by giving the animal large doses of cholestrol suggests that it may be a disturbance of lipoid metabolism, pathologic in nature, and not a true ageing phenomenon. The iris shows a fading of color with advancing age. The pupil tends to myosis and reaction is less rapid and with a decreased excursion. The ciliary body shows progressive fibrosis, lipoid infiltration, and hyalinization of the ciliary processes. The ciliary muscle fibers become thinner and denser and the muscle itself shows an increase in fibrous tissue. The decrease in accommodation, however, is due to lenticular change rather than that in the ciliary body. The vitreous shows an increase in the insoluble framework and the sheets become more closely packed in the periphery, causing a dulling of the retinal lustre. The retina shows a progressive cystic degeneration at the periphery, and becomes thinner and denser as age advances. Beginning in early senescence the choroid arteries show thickening and hyalinization of the media and the interstitial fibrillar tissue of the choroid increases. Bruch's membrane thickens. The sclera undergoes dehydration and becomes thinner and denser. After 50 the scleral hardening gives rise to a progressive ocular rigidity which furnishes a useful index of the senescence of the entire somatic connective tissue. The optic nerve shows an increase in interstitial fibrillar tissue and a deposit of corpora amylacea in the meningeal sheath. Refractive changes include a change in astigmatism from the major axis vertical to the major axis horizontal and a myopic tendency. The onset of presbyopia is usually in the fifth decade, but it increases much after 50. There appears to be a very close parallel between the advance of presbyopia and the decline of the sexual function.

Impairment of the hearing begins at about 50 and slowly progresses. This is most noticeable for high tones, especially above frequencies of 512 double vibrations per second, and the higher the tone the greater the impairment. This is due to simple atrophy of the nerve in the inner ear and the end organ in the cochlea. The osseous tissue of the ear becomes more brittle and bone conduction diminishes with advancing age.

THE NERVOUS SYSTEM

The meninges in the aged brain are thickened and usually adherent. The brain weight lessens as senescence advances, subsequent to a general brain atrophy involving especially the frontal lobes and occipital poles. Both white and gray matter are involved in the general atrophy and the color of the gray matter deepens with age. There is a numerical atrophy of nerve cells, most marked in the frontal area, but involving as well the basal ganglia, the cerebellum and the brain stem. The axons of the Purkinje cells may show spindle-shaped swellings, the so-called "torpedoes." Proliferative as well as regressive changes are present in the neuroglia.

Various deposits—pigments, free iron, and corpora amylacea, the latter especially numerous—are found. "Senile plaques", dense circuloid areas with an amorphous centre, are found, especially in the frontal, temporal and occipital regions. These are not present before 75 and are constantly found after 90. Involutional vascular changes, thickening of intima and media, hyaline infiltration and splitting of the internal elastic lamina are noted. The spinal cord shows degenerative changes in the ganglion cells, pigmentary atrophy of the ventral horn cells, increase of neuroglial fibers, and patchy degeneration of the myelin sheaths. Among the clinical nervous findings incident to ageing are: decrease in vibratory sensibility beginning distally in the extremities and in tactile and pain sensibility. Impairment of acuity of all the special senses is common. After 50 the abdominal reflexes are usually absent. In late senescence the pupils are miotic and sluggish. The knee jerks and ankle jerks are sluggish or absent, and extensor plantar response without other pyramidal signs is common. There is a general slowing up of muscular movement, and a "senile tremor" may be present.

THE THYROID

The aged thyroid is reduced in size, there is a definite increase in the connective tissue, and a progressive increase of the lymphoid infiltration of the stroma. The blood supply is diminished, the number of follicles is reduced, and the cells are smaller, the epithelial cell mitosis is lessened, the colloid is less in volume and appears less dense. There is a definite and progressive lowering of the basal rate as age increases, probably as much as 25 per cent in late senescence.

As age progresses the homeostatic mechanisms are not affected to any marked degree under ordinary circumstances, but when subjected to stress they are able to function within a narrowed range only.

The cerebrospinal fluid increases in volume paralleling the decrease in brain volume, but otherwise shows adult maturity values.

Visceral and cutaneous sensations show a gradual diminution of acuity as age increases and vibratory sensibility at 70 is only half that at 20. Perception is not so prompt and its span is shorter. Individual superiority in youth is persistent with age progress, so that a superior individual in youth tends to retain his superiority over the common herd in adulthood and in senescence. Learning power is retained well, and this is especially true when the subject matter studied consists of materials in which the learner is interested or which he desires to acquire. There is, however, a decrement of speed and accuracy in learning as age advances, especially when the learning task involves reorganizing established habit systems. Intelligence tests show a decline with increasing age, apparently due to the slowing up of the speed factor in response, but intellectual persistence shows no decrement. Thus, for performance where rapid reaction is not necessary but the essential factors are comprehension, experience, reasoning and judgment, the response is good so long as the individual tested maintains mental practice and intellectual interest. The language function, especially the vocabulary, is well maintained in senescence. Interests definitely change with advancing years, those in physical activities and amusements waning and those in home, reading and intellectual activities becoming ascendant. Psychological maturity is maintained after the physiological life curve has begun the downward swing, and the power of successful administration is maintained well after physical decline has set in. This is probably a result of the experience increment. In general, to quote Miles, "the more the behavior product involves experience and considered judgment, the more resistent it is to the psychophysiological age deterioration."

IMPAIRMENT OF MEMORY

The impairment of memory for recent events as a part of the senescent process is a matter of common knowledge. Memory is, however, dependent upon attention, and it may be that the memory impairment is, at least in part, a matter of inattention, and as

such not wholly irreversible. As age progresses, the individual tends to become more conservative, more reactionary, and more intolerant to change of any kind, thus developing an implasticity of attitude. The senescent is likely to develop feelings of inferiority, general inadequacy, self-deprecation and anxiety, especially if his environment is not satisfactory and congenial. In late senescence garrulity, eating, sleeping, urinating, and especially defecating tend to become the outstanding satisfactions of life.

CONCLUSION

We have listed the changes which, so far as is known, are commonly or universally found in the aged and have presented them as the normal phenomena of ageing which we believe to be an involutionary physiological phenomenon inherent in the organism. The fact that death is universal would in itself seem to prove the point, for certainly some individual at some time must have had an ideal germ plasm and an ideal environment. In addition, the known senescent changes in the placenta present strong evidence in favor of a physiologic senescence. We agree therefore with Warthin that senescence is physiological, inevitable, inherent in the cell itself, and constitutes the major involution of the life span.

BIBLIOGRAPHY

1. Barker, L. F.: *The Senile Patient*, Annals of Internal Medicine; 6: pp. 1125-35, March, 1933.

2. Boas, Ernest P.: *Treatment of the Patient Past Fifty*, Chicago; The Year Book Publishers, 1941.

3. Cowdry, E. V.: *Problems of Ageing*, Baltimore, Williams & Wilkins Company, 1942.

4. Davis, Nathan S., III: *Factors Which May Influence Senescence*, Annals of Internal Medicine; 18, pp. 81-88, January, 1943.

5. Hall, G. Stanley: *Senescence*, New York, D. Appleton & Company, 1922.

6. Hrdlicka, Ales: *The Old Americans*, Baltimore, Williams & Wilkins Company, 1925.

7. Miles, Walter R.: *Psychological Aspects of Ageing*, in *Problems of Ageing*, Baltimore, Williams & Wilkins Company, 1942.

8. Pepper, O. H. Perry: *Notes in the Field of Geriatrics*, Medical Clinics of North America, 20:127-144, July, 1936.

9. Stark, Lucien: *The Senile Heart*, Southern Medicine & Surgery, 104: August, 1942.

10. Thewlis, Malford W.: *The Care of the Aged*, St. Louis, C. V. Mosby Co., 1942.

11. Tilney, F.: *The Ageing of the Human Brain*, Bulletin N. Y. Academy of Medicine, pp. 1125-1143, 1928.

12. Todd, T. Wingate: *Skeleton and Locomotor System*, in *Problems of Ageing*, Baltimore, Williams & Wilkins Company, 1942.

13. Van Liere, Edward J.: *The Effect of Senescence on Gastric Emptying;* W. Va. Med. Journal, 38: pp. 114-117, March, 1942.

14. Warthin, A. S.: *Old Age*, New York, Paul B. Hoeber, 1929.

15. Weidman, Fred D.: *Ageing of the Skin*, in *Problems of Ageing*, Baltimore, Williams & Wilkins Company, 1942.

16. Wetzel, G.: *Altersanatomie*, Verhandl. d. anat. Gesellshaft, 41: pp. 15-36, 1932.

Heredity in Chronic Alcoholism

The usual explanation that alcoholism is simply an expression of an underlying neurosis inadequacy is insufficient, for most of our patients have become quite normal when they stopped drinking. True, alcohol may be an escape from reality, but many individuals with greater handicaps than the alcoholic fail to seek this way out. Nor does a critical review of patients' histories show that they have become conditioned to alcohol through environmental association. Rather, alcoholics seem to have an innate susceptibility to alcohol which we believe is akin to an allergy to a food or an idiosyncrasy to a drug.

Alcoholism is four times as frequent in the family history of the excessive drinker as of the normal drinker. The inheritance is that of an abnormal reaction to alcohol in that the effects of the drug are more attractive and less obnoxious than to the normal drinker.

There is a nonspecific relationship between the inheritance of psychopathy and alcoholism.

Total abstinence often is an equivalent of alcoholism in that the individual instinctively avoids a substance to which he would have an abnormal reaction.

We believe that treatment directed specifically toward depriving the excessive drinker of his abnormal pleasure in alcohol is logical and full of therapeutic possibilities.—F. Lemere, et al, in *Northwest Medicine*.

Tuberculosis Abstracts

Furnished Through the Courtesy of the West Virginia Tuberculosis Association

Why sift the population for previously undiagnosed tuberculosis? The answer usually given points first to the benefits conferred on the individual whose tuberculosis is discovered early and treated promptly, next emphasizes the necessity for protecting public health through segregation of bacillary cases, and concludes with the sound economic principle of saving the money and resources of everyone concerned. Now that war demands threaten existing treatment facilities and, by the same token, might become reasons advanced for curtailing mass surveys, an argument is advanced that says the continued finding of cases in excess of available bed capacity is the best possible lever to use, not merely to maintain present beds, but to secure new ones. There seems to be no good excuse for slackening off our attack on the total tuberculosis problem simply because the bed problem has become acute. The clear indication is that if we blindly allow ourselves the luxury of finding less tuberculosis now, we most certainly shall find more tuberculosis later on.

Time For More Tuberculosis Case Finding

Case finding is the major activity of the Department of Health in New York City in the prosecution of its campaign to control tuberculosis.

In consideration of the known overcrowding in institutions in the city and the number of cases at home but in need of some form of institutional care, it is estimated that New York City needs 3,000 additional beds. As important as adequate beds may be in providing treatment or isolation for the active or infectious case, there is no cause to delay or curtail an aggressive case-finding program. That program during the past is responsible in large part for the beds now available and the present deficiency will only be met if there is a demonstrated need for them.

We must educate the lay public to a realization of the tuberculosis problem and how to solve it. People known to have been exposed must be reached, apparently healthy citizens must be screened and budget-making officials must be impressed and their support secured. Among our own professional groups nurses and physicians have to be won over, in many instances, to a sympathetic consideration of the problem and the employment of modern methods of discovery. Fortunately, although some older physicians remain unconvinced, medical students and younger doctors are being exposed to up-to-date teaching that is effective.

The basic program in case finding must start with a search for disease among those in close contact with an open case. This problem is particularly important where congested housing and similar opportunities for close contact exist. In order to make existing clinic facilities available for an increasing load of screening apparently healthy people drawn from groups of known high tuberculosis incidence, it has been necessary to develop a system that will do so without decreasing the effectiveness of the search among contacts.

Changes resulting in a saving of about 6,000 man-hours of labor per year have been introduced, without any apparent loss of efficiency in examining contacts. Previously, each new case admitted had the regulation history form completed, was given a physical examination; children were tuberculin tested using 0.1 and 1.0 mg. O.T. (Mantoux). Reactors were x-rayed, as were all adults above the age of fifteen. Rarely did more than 5 to 10 per cent reveal findings sufficient to call for further study.

The new procedure replaces the regular history with a 5 x 8 inch card providing space for contact history and presenting symptoms. A physician sees each case briefly. Complete examination is made only in those rare cases warranted by a suggestive history. Most cases proceed directly to the x-ray department. If the radiograph is negative, further examination is not done unless the individual is over 10 years of age and recently exposed to open tuberculosis. Those with suspicious or manifest evidence of disease by radiograph are called back to the clinic for complete history, physical examination and other investigation and are supervised appropriately. Children between the ages of 3 and 10 with normal x-ray findings are not routinely supervised until they pass the latter age and then in accordance with their continued exposure to a bacillary case.

The application of these principles has resulted in reduction of the case-load carried in all clinics, permitting more attention to the significant cases and extending the use of clinic facilities in reaching others. There has been noted improved staff morale and greater satisfaction among the patients.

(Continued on page xxix)

The President's Page

The West Virginia State Medical Association is to be congratulated upon the selection of Bob Reed for President. If you will support him as you have me, you may be assured of a most successful year. He is qualified for this leadership by reason of experience (though young in years) and I am sure his dynamic personality will contribute in a large measure toward a closer unity of purpose and thought among West Virginia physicians.

The House of Delegates wisely selected men of judgment and experience for the other important offices which further bespeaks for a successful year in the medical affairs of our state.

My sincere appreciation goes to all who contributed so generously in both time and effort in making the 76th Annual Meeting of our Association a success.

I congratulate the members of the Woman's Auxiliary in their wise choice of Mrs. John P. Helmick, of Fairmont, as President. She will, with our support, initiate a program that will be outstanding and reflect glory to this organization and be most helpful to the medical profession in perfecting future plans.

West Virginia Medical Journal

Official Journal of
The West Virginia State Medical Association
302 Atlas Bldg., Charleston, West Va.

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James R. Bloss, M. D. . . . . Huntington

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Published monthly on the first day of the month, at Charleston, by The West Virginia State Medical Association.

Original articles are accepted on condition that they are contributed exclusively to the Journal.

Advertising rates furnished upon request. All advertisements must conform to the standard established by the Council of Pharmacy and Chemistry of the American Medical Association.

Address all communications to Business Manager, West Virginia Medical Journal, Box 1031, Charleston, West Va. Phone, Capitol 34-625.

SUBSCRIPTION $3.50 PER YEAR

Entered as second-class matter, January 1, 1926. Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917. Authorized July 24, 1919.

76TH ANNUAL MEETING

One of the most successful conventions in the history of the State Medical Association was brought to a close at Charleston, Tuesday evening, May 18, with the adjournment sine die of the House of Delegates.

The success of any meeting is measured principally by three things. Registration is one and attendance at sessions is another, but the third and most important is the degree of interest manifested in and enthusiasm shown for the program. Viewed from this angle, the meeting was an unqualified success, for the registration of doctors was approximately 325, the attendance at every session taxed the capacity of the ballroom at the Daniel Boone Hotel, and speakers on the program from Sunday evening until the close were received with an enthusiasm that was expressive of interest and appreciation in the subjects that were so ably presented.

Streamlined to meet war conditions, with all formal entertainment features eliminated, the meeting was a true test of the interest of doctors in a well-balanced program on scientific subjects presented by men and women exceptionally well qualified to discuss topics assigned to them. Further, it was a test of the issue concerning the propriety of holding a convention without the usual interesting social features to attract the members of an organization. The question of whether a state meeting of doctors can be held without these added attractions was answered affirmatively in no uncertain terms. The attendance of doctors at scientific sessions in 1943 was larger than at any previous convention held in the history of the Association.

Fortunate indeed were we to have presented to us such an array of varied and interesting topics of interest to all those engaged in the practice of medicine. Speakers of national renown were cordially welcomed to our midst and widely acclaimed after masterful presentations of subjects with which they were thoroughly familiar.

The Council is to be commended for its unanimous decision to hold the 1943 convention in the face of large odds occasioned by reason of the war. The scientific work committee deserves much credit for building a program, each part of which was interesting to the doctors in attendance. And, the members of the State Medical Association are to be congratulated for taking advantage of an opportunity to attend what proved to be interesting and helpful postgraduate courses in the various branches of medicine and surgery.

If the West Virginia meeting is any criterion of the interest of doctors in state meetings in other parts of the country, then no state association need have any fear concerning the success of any meeting that may be scheduled for this year.

THE PRESIDENT-ELECT

The selection of Dr. Robert J. Reed, Jr., of Wheeling, as president of the West Virginia State Medical Association, has met with universal approval on the part of members of the organization. The reaction of the public generally is also most favorable, for Dr. Reed is one of the outstanding surgeons of

the state. He has a wide acquaintance among the business and professional men and women of West Virginia.

Never before in the seventy-six years history of the State Association has there been greater need for aggressive leadership. We need men of character and vision, men with energy and enthusiasm for the work that lies ahead, men who can say "no" and stick to it. In "Bob" Reed, we have such a man. Though young in years, he is mature in knowledge of the problems that confront medicine in these critical times.

Serving as president of a component society is wonderful training for a doctor in that he is enabled to obtain an expression of the views of a pretty considerable cross-section of the members of the profession in a wide area. Membership on the Council helps to acquaint him with problems with which doctors in the far corners of the state have to contend. Combined, the training is of inestimable value to one who is elevated to the presidency of the state organization. Dr. Reed has served as president of his society and as a member of the Council. He is well equipped to handle the larger affairs that will need attention when he takes office in 1944.

Dr. Reed possesses a wonderful personality. He is outspoken in his views, but withal is friendly, possesses a good sense of humor, and is always active in the affairs of the Association. The program that has been outlined by and is now being put into effect so successfully by Dr. R. J. Wilkinson, president, cannot possibly be completed during 1943. To succeed him in office and to continue the study of problems with a view to ultimate reform in the interest of medicine, the Association could not possibly have chosen more wisely.

We congratulate Dr. Reed, whose father served with distinction as president in 1919, and who today, even at 84 years of age, is active in the practice of medicine. But, especially do we congratulate the doctors of West Virginia for placing the affairs of the Association in the hands of one so capable and well qualified to discharge the duties of the office to which he has been elected.

REGIONAL MEDICAL MEETINGS

During the emergency, national medical meetings, except possibly for some of the smaller groups, are definitely out of the picture. Postgraduate study is being carried on, however, and properly so through regional meetings, the success of which has been outstanding. As an example, the Washington meeting of the American College of Physicians was conspicuous. Of the 578 members in the area represented, 263 or 45.5 per cent were in attendance, and 200 other physicians attended as guests.

When we consider that the average age of the college membership is 49 years, and that more than 28 per cent of its members are on duty with the armed forces, such a record is little short of phenomenal. The Columbus meeting, while a distinct success, had a much smaller percentage of membership (27 per cent). At the national meetings in peace time the percentage of members attending has ranged from twenty to twenty-three per cent.

Our own state meeting at Charleston was a conspicuous example of a successful regional meeting. We have never seen a better program anywhere, and the attendance was excellent. The attendance at each presentation was likewise better than we have ever seen at a West Virginia state meeting. The interest in the exhibits was quite noticeable, and representatives in charge of commercial exhibits report a heavy registration on both days of the convention.

The largest of the regional societies, the Southern Medical Association, has not yet decided whether it will hold a convention this year or not, but its plans will be completed at a meeting of the executive committee to be held in New Orleans about June 1. We trust the decision will be in favor of a meeting at some accessible point in the mid-South at the usual time in November.

THE VIRGINIAS AND MEDICAL EDUCATION

It now seems proper to comment upon the effective efforts of West Virginia to further solve its problems of medical education and the relation of this effort to Virginia.

Based upon a comprehensive report of a committee of the West Virginia State Medical Association, of which the dean of West Virginia University medical school was a member, decision was reached that this is not the time to develop a four-year medical school in West Virginia; that, however, the program of the present two-year medical school at Morgantown devoted to the medical sciences should be further strengthened wherever practicable and arrangements made with some four-year medical school to receive West Virginia graduates in the medical sciences on a voluntary basis for the completion of their work, this arrangement to be subsidized by West Virginia University.

This recommendation was duly accepted by the authorities of West Virginia University, by the Governor of the State, and by the profession generally. An enabling act to make legal this proposal has been unanimously adopted by the West Virginia legislature which has also provided funds appropriate to the consummation of the project.

Meanwhile, the authorities of West Virginia University, backed by representatives of the State Medical Association, have been negotiating with the Medical College of Virginia with a view to working out arrangements for the transfer of some fifteen to twenty medical students annually to Richmond for the last two years of their instruction. This would add a total of from thirty to forty students per year after the first year to the third and fourth-year classes of the school of medicine at the Medical College of Virginia, whose total matriculation would still be less than a decade or more ago. The subsidy paid by West Virginia University and student fees would add something like $40,000 or $50,000 a year for instructional purposes in the clinical years of the medical course.

Since the first discussions regarding this new venture began many have been consulted, including the Governor of Virginia and other State officials, the Board of Visitors, faculty, alumni council, officers of the Council on Medical Education and Hospitals of the American Medical Association, officials of the Rockefeller Foundation, and many other leaders in education and medical education. Interestingly enough, the reaction in favor of this cooperative plan has been practically unanimous. Many have referred to it as pioneering of great moment and as a pattern for the solution of the two-year medical school problem. Others see in it a method of solving certain other issues, not all of them educational necessarily, which can be effected more soundly on an inter-state basis than on an intra-state basis. Some say that states increasingly must undertake joint action in the interest of economy and quality of results. Certain it is that many implications of far-reaching significance can be pointed to here.

To summarize, some of the advantages of cooperation between the two Virginias are: medical education in West Virginia can go forward in an approved manner and at reasonable cost; the cooperative arrangement will enlarge the constituency of the Medical College of Virginia by adding West Virginia and will make Richmond increasingly a medical center for that State, which already has more physicians who are graduates of the Medical College of Virginia than of any other institution; the plan will call for no capital outlays and will not reduce the number of students which either institution now accepts; the increased revenues of each institution will permit strengthening teaching staffs; diplomas of West Virginia students will set forth the procedure followed in their education and will be attested to by certain individuals at each institution; the closest possible cooperation between the two schools will be developed in relation to curriculum organization, in promotion of students at Morgantown to Richmond and their subsequent graduation, and in the general welfare

of each institution. If successful, a pattern for joint action by states will be demonstrated.

This program is tentatively scheduled to go into operation January, 1944. A formal contract between the participating medical schools remains to be approved and executed. Many of the details involved have already been carefully considered at length.

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*Guest Editorial by Dr. W. T. Sanger, President, Medical College of Virginia, in April issue of *Virginia Medical Monthly*. Reproduced with permission.

HANDBOOK ON RHEUMATIC FEVER

"Rheumatic Fever in Children—Its Recognition and Management", a 32-page clinical handbook written for the practicing physician, has just been released by the Metropolitan Life Insurance Company. It assembles under one cover the modern concepts of the disease; its nature, diagnosis and prognosis and the individual and community problems involved in the care of the patient. A group of distinguished clinicians and the following organizations assisted in its preparation: the American Heart Association, the American Academy of Pediatrics, the Children's Bureau of the United States Department of Labor and the United States Public Health Service. Other educational material has been developed by the Company in connection with its national program to reach the general public and the medical profession with information on this disease.

Single copies of the handbook are being made available to physicians, without charge, cheifly through the 16,000 field representatives of the Metropolitan Life Insurance Company. Physicians who desire a copy should write to Dr. George M. Wheatley, Assistant Medical Director, Metropolitan Life Insurance Company, 1 Madison Avenue, New York, N. Y.

DR. R. K. BUFORD ILL

Dr. R. K. Buford, State Chairman of the Procurement and Assignment Committee and Past President of the West Virginia State Medical Association, who has been ill in a Charleston hospital for several days, is now convalescing at his home in that city.

Convention Transactions

Seventy-Sixth Annual Meeting of the West Virginia State Medical Association, Charleston, May 17-18, 1943.

COMMITTEE ON PRESIDENT'S ADDRESS

We have listened to an excellent and timely presidential address, summarizing the foremost problems confronting the medical profession today.

We find ourselves in substantial agreement with the president's remarks on public health work and our state institutions, and these recommendations merit careful consideration by the Planning Committee. We join with the president in expressing our gratitude to both Governor Neely and the members of the legislature for their support and cooperation.

We are proud of the progress in medical education as outlined in the address, particularly concerning the four-year term provided for our medical students. Further, we endorse the president's idea that a committee of doctors interview prospective medical students to determine their qualifications for entering upon the study of medicine.

Many of our recent past presidents have brought to our attention the problem of the increasing cost of medical care and the demand for some form of prepaid medical insurance. Due to the many obstacles and need for further study, this serious problem has not been solved. However, the necessity for action is now more urgent than it has ever been and we hope that the new Fact Finding and Planning Committee will arise to the emergency and recommend a program satisfactory to the majority of Association members. We particularly commend the president's remarks that this is the time to lay aside petty jealousies and sectional grievances, and to work together in unity for the general good of the public as well as organized medicine.

Respectfully submitted,
R. M. BOBBITT, *Chairman;*
D. A. MACGREGOR,
FRANK LANGFITT.

REPORT OF EXECUTIVE SECRETARY

At the time of the meeting of the House of Delegates in 1942, the finances of the Association were at such low ebb that it was necessary to levy

a special assessment of ten dollars each against the active members to make up a deficit occasioned principally by reason of the nonassessment of dues against members in the military service. Today, thanks to the cooperation and willingness of members to pay the special assessment together with annual dues, it is possible to present a much different picture. There is sufficient cash in the treasury to meet all expenses for the current year.

Dues for 1943 have been paid by all active members of the Association with the exception of 56. Of the number who have paid their dues, only 16 have failed to pay the special assessment. Even some of the honorary members have insisted upon making this contribution, and some few have also paid dues for this year. No dues will be assessed against members of the Association serving with our armed forces so long as they remain in active service.

This hearty response of the members to the call for financial assistance in time of need is but another indication of continued interest on their part in the welfare of the state organization. The association membership totals 1,327, a net loss of 7 members since July 1, 1942. This loss may be accounted for by the fact that interns and residents have accepted commissions in the armed forces without joining any component society, for new members total but 47, compared with 74 for the preceding year. There are now 72 honorary members of the Association.

During the past year, 22 members of the Association have died, and 29 have moved from the state to other locations. This latter figure compares with 16 for the preceding year.

The number of members of each component society is set forth in the following table:

Barbour-Randolph-Tucker	43
Boone	12
Brooke	9
Cabell	121
Central West Virginia	37
Doddridge	3
Eastern Panhandle	28
Fayette	54
Greenbrier Valley	29
Hancock	20
Harrison	81
Kanawha	209
Lewis	20
Logan	49
Marion	56
Marshall	18
Mason	7
Mercer	53
Mingo	29
Monongalia	50
McDowell	67
Ohio	95
Parkersburg Academy	74
Potomac Valley	28
Preston	19
Raleigh	75
Summers	10
Taylor	9
Wetzel	11
Wyoming	13

As of this date, fourteen component societies have reported a one hundred per cent paid up membership. They are as follows: Barbour-Randolph-Tucker, Boone, Brooke, Cabell, Doddridge, Eastern Panhandle, Hancock, Harrison, Lewis, Marion, Marshall, Mercer, Preston, Taylor.

One county society has but one delinquent member, four but two each, and four but three each. The number of delinquents for the ten-month period is about the same as in preceding years, and it is probable that within the next few days several additional societies will be over the top.

Of the 399 West Virginia doctors in service, 293 are members of the Association. We are constantly in touch through the mails with all of these members, with the exception of about twenty-five whose present addresses we have been unable to obtain. We have taken every possible step to make sure that each issue of the WEST VIRGINIA MEDICAL JOURNAL, as well as all bulletins mailed to the membership, reach those in the service. Interesting letters are received daily from our members in this country and in all parts of the world, and we shall continue to provide addresses of these members and print excerpts from their letters in the JOURNAL.

The Association has invested approximately $3500 in certificates of Fidelity Assurance Association. The affairs of this organization are again being administered by receivers appointed by the Circuit Court of Kanawha County, the United States Supreme Court having upheld the Circuit Court of Appeals in ordering the petition in bankruptcy dismissed.

There is some slight delay in liquidation at the present time pending a possible appeal to the Circuit Court of Appeals on the ground that the costs of

the proceedings in the federal court as approved by the district court are excessive. However, liquidation will proceed as rapidly as possible, and I am told that it is more than likely that creditors will receive approximately 80 per cent on their investment. This would mean that the Association would be paid $2,800 on the $3,500 invested. It is likely that a substantial dividend will be paid within the next year.

The house owned by the Association, located on Venable Avenue, South Ruffner has been rented throughout the past year at $65 per month, and the debt for this old Nicholson account has been reduced from $5,390.08 as of July 1, 1942, to $4,901.28. The complete audit of Association finances was presented by the Treasurer, Dr. T. Maxfield Barber, at a meeting of the Council last January, and was printed in the February, 1943, issue of the JOURNAL.

Various Association committee reports were published in the May issue of the JOURNAL, and I am sure that it is unnecessary to call to your attention again the very fine work that has been done by these committees during the past year.

The officers of component societies have been tireless in their efforts to assist our headquarters staff in all matters. Particularly was this true during the last session of the legislature when effective work on their part helped substantially to win legislative approval for the Association's legislative program. To them and to all the members of the Association I extend the sincere thanks of the headquarters staff for splendid support and wholehearted cooperation during the past year.

Respectfully submitted,

CHARLES LIVELY,
Executive Secretary.

PUBLICITY COMMITTEE

At the second session of the House of Delegates, Tuesday evening, May 18, the following resolution, presented by Dr. James L. Wade, of Parkersburg, on behalf of the Publicity Committee, was unanimously adopted:

The Publicity Committee of the West Virginia State Medical Association having been inaugurated by this House of Delegates last July, 1942, and the members of which were appointed by the President of the West Virginia State Medical Association, has been actively functioning during the past year. We wish to thank the Executive Secretary of the State Association and his staff for their cooperation. We also wish to thank the secretaries of the component societies, as well as local publicity committees, for the efficient manner in which they employed the suggestions of the State Publicity Committee. We appreciate the approval given to our report which was published in the May issue of the WEST VIRGINIA MEDICAL JOURNAL and wish to apologize for not having prepared the exhibit mentioned in this report. The absence of our exhibit was not due to any lack of interest but due to the illness of one of our members which precluded preparation for the exhibit.

Due to the fact that during this coming year, there will be many new developments both in the practice of medicine and in the contact of medicine with the public, and likewise due to the fact that your committee lives in three widely separated points in the state, we propose the following resolution:

WHEREAS, The Secretary of the State Medical Association has a thorough working knowledge of the program of the State Publicity Committee and

WHEREAS, Occasionally matters needing immediate publicity may require action before the committee could be assembled,

Be It Resolved, That the President of the West Virginia State Medical Association be empowered to reappoint a state publicity committee for the coming year and to designate the secretary of the State Association as liaison officer for the Committee, so that the release of ethical medical publicity could be expedited with the approval of the entire committee.

Be It Further Resolved, That the West Virginia State Publicity Committee consider it their duty to keep up to date on all developments relative to the practice of medicine and to arrange that the public be acquainted with each and all developments with reference to medicine, contributions to public health, and to the part medicine is playing in the prosecution of the war by our efforts both on the battle line and on the home front.

Respectfully submitted,

JAMES L. WADE, M. D.,
Chairman;
W. W. POINT, M. D.,
C. O. POST, M. D.

WARTIME MEMBERSHIP COMMITTEE

At the first session of the House of Delegates, held on Monday evening, May 17, Dr. C. O. Post, of Clarksburg, reported the substance of a resolu-

tion adopted by the Harrison County Medical Society with reference to the election to membership in county societies of physicians who complete their internships and residencies and immediately accept commissions in the armed forces of the United States.

The matter was referred to a special committee composed of Dr. John C. Kerr, Clarksburg, Chairman; Dr. R. M. Wylie, Huntington, and Dr. George P. Heffner, of Charleston, for consideration and report.

At the second session, held Tuesday evening, May 18th, the committee presented a report in the form of the following resolution, which was unanimously adopted:

WHEREAS, Many young physicians are being called into active service with the armed forces upon the completion of their intern and residency services; and,

WHEREAS, By so doing they will be unable to comply with the usual rules governing admission to membership in any county medical society; and,

WHEREAS, We believe that all physicians should be given the opportunity to become members of organized medical societies;

Therefore, Be It Resolved, That the West Virginia State Medical Association recommend to its various component societies that any physician who is a legal resident of the state of West Virginia when he has finished his medical training, whether it be internship or residency, and who is called into the service of the armed forces of the United States, and who is licensed to practice by the Public Health Council of West Virginia or the National Board, shall be eligible for membership in the society of the county of which he is a resident without the usual probationary period of practice, and shall be exempted from payment of dues as long as he remains in active military service.

JOHN C. KERR, M. D.,
Chairman;
R. M. WYLIE, M. D.,
GEO. P. HEFFNER, M. D.

NECROLOGY REPORT

J. Lincoln Pifer, Buckhannon.....May 21, 1942
John A. Vickers, Matewan.....August 19, 1942
Posey G. Hurst, Oceana.....September 14, 1942
John C. Harrison, Bradshaw..September 25, 1942
Rush Floyd Farley, Delbarton..October 13, 1942
John W. de Vebre, Ronceverte.October 28, 1942
John Charlton Bigony, Hinton..October 31, 1942
Wm. R. Hughey, Charleston.November 13, 1942
G. H. Davis, Hollidays Cove.November 20, 1942
Michael B. Kelly, Wheeling.December 11, 1942
Ira Mason Smith, Princeton...January 10, 1943
Leonard Eskey, Wheeling.....January 17, 1943
C. C. Johnson, Harpers Ferry..January 18, 1943
T. J. Casto, Charleston.....January 20, 1943
John H. McColl, Wheeling....January 20, 1943
J. E. Barrows, Parkersburg...February 18, 1943
R. R. Sisson, Kitzmiller, Md...February 21, 1943
Charles W. Waddell, Fairmont..March 29, 1943
Albert H. Hoge, Bluefield.....April 8, 1943
Jesse A. Work, Blue Creek.....April 8, 1943
R. L. Osborn, Clarksburg.....April 13, 1943
J. O. Hill, Huntington.....April 26, 1943

Requiescat in Pace!

Respectfully submitted,
JAMES R. BLOSS, M. D.,
Chairman;
H. R. JOHNSON, M. D.,
CHESTER R. OGDEN, M. D.

Obituaries

J. O. HILL, M. D.

Dr. J. O. Hill, retired physician of Huntington, died in a hospital in that city April 26, following an illness of two weeks.

Dr. Hill was born in Putnam County, West Virginia, May 20, 1881. He graduated from the University of Louisville School of Medicine in 1912, and practiced his profession at Logan for over 25 years, specializing in obstetrics and pediatrics. He had lived in Huntington for the past five years. He was an honorary member of the Logan County Medical Society and the West Virginia State Medical Association.

Dr. Hill is survived by his wife and two daughters, Elizabeth Ann and Nancy Sue.

ROBERT LINN OSBORN, M. D.

Dr. Robert Linn Osborn, of Clarksburg, was born in that city in 1876. He received his A. B. degree from West Virginia University, and graduated in medicine from the University College of Medicine, Richmond, in 1908. Dr. Osborn located for the practice of his profession at Clarksburg in 1908, where he continued in active practice until his death, April 13, 1943.

Besides his widow, Dr. Osborn is survived by one daughter, Jane Linn Maxwell.

General News

DOCTORS CROWD SCIENTIFIC SESSIONS AT ANNUAL MEETING

The 76th annual meeting of the West Virginia State Medical Association was opened informally Sunday evening, May 16, with a public meeting in the Shrine Mosque, at which an address was delivered by Sister Elizabeth Kenny, of Minneapolis. The auditorium was crowded, and a feature was the attendance of over 150 nurses in uniform. Sister Kenny, though suffering from the effects of a cold, presented a most interesting paper on "The Kenny Concept of Infantile Paralysis."

The total doctor registration for the convention was 323, which number far exceeded the expectations of most of the members of the association throughout the state. Besides the West Virginia doctors present, there were many distinguished guests from the Army, Navy, and Public Health Service.

Scientific Sessions

Possibly never in the history of the organization has a better scientific program been presented. The attendance at all sessions exceeded that at any previous convention. The ballroom at the Daniel Boone Hotel was literally packed throughout the two-day meeting, and "standing room only" was literally the order of the day.

The papers presented by the guest speakers were enthusiastically received and the innovation of a question period as a substitute for discussion was apparently satisfactory to those in attendance. The sessions were started and ended on time, and although the various divisions of the program followed immediately one after the other, the ballroom remained crowded morning, afternoon, and evening.

The luncheons of the various sections and societies were unusually well attended, and guest speakers were presented at all such affairs.

Interesting Exhibits

The exhibits were interesting to doctor and layman alike, and the commercial exhibits drew crowds from the opening hour in the morning until the closing late in the afternoon. There was a satisfactory registration at all booths, and the colorful displays did much to add to the attractiveness of the affair.

Scientific exhibits were above par and received much favorable comment. They were set up under the supervision of a committee composed of Dr. Hu Myers, of Philippi, Dr. John P. Helmick, of Fairmont, and Dr. F. R. Whittlesey, of Morgantown.

HOUSE OF DELEGATES

The ballroom was well filled at both sessions of the House of Delegates. The first session on Monday evening lasted but a little over a half hour, additional reports being received from officers and committees. Much more time was consumed at the second session due to the introduction and discussion of several resolutions, and the annual election of officers.

The annual award of the President's Charm was made to Dr. R. J. Wilkinson by Dr. R. O. Rogers, immediate past president and chairman of the Council.

Dr. Robert J. Reed, Jr., President-Elect

Dr. Robert J. Reed, Jr., of Wheeling, West Virginia, was born in that city March 9, 1898, son of Dr. Robert J. and Louise (Butler) Reed; graduated from Washington & Jefferson University in 1920 with the degree of A. B., and from University of Pennsylvania School of Medicine in 1924 with the degree of M. D.; interned at University Hospital, Philadelphia, 1924; residency

same hospital, 1925-26; located for the practice of medicine at Wheeling in 1927; general surgery; married June 10, 1926, to Dorothy Westfall; three children, Robert J. Reed, III, Dorothy Ann and Louise Butler; Fellow of the American College of Surgeons; has served as president of the Ohio County Medical Society, and as councillor of the West Virginia State Medical Association.

Election of Officers

The following officers were elected for 1944:

President, Dr. R. J. Reed, Jr., Wheeling; first vice president, Dr. H. G. Steele, Bluefield; second vice president, Dr. T. G. Reed, Charleston; treasurer, Dr. T. M. Barber, Charleston; A. M. A. delegate, Dr. Ivan Fawcett, Wheeling; A. M. A. alternate, Dr. James L. Wade, Parkersburg.

Councillors: First district, Dr. R. D. Gill, Wheeling, to succeed Dr. J. C. Peck; second district, Dr. Carl E. Johnson, Morgantown; third district, Dr. E. A. Trinkle, Weston, to succeed Dr. L. W. Deeds; fourth district, Dr. Walter C. Swann, Huntington, to succeed Dr. Raymond Sloan; fifth district, Dr. N. H. Dyer, Bartley, to succeed Dr. George W. Easley; sixth district, Dr. W. P. Bittinger, Summerlee, to succeed Dr. H. L. Goodman.

The only outgoing councillor eligible for reelection was Dr. Carl E. Johnson of Morgantown, and he was elected to succeed himself for the term of two years.

Resolutions Adopted

A resolution presented by a special committee on membership appointed Monday evening, May 17, recommending that the usual probationary period of practice required of interns and residents before admission to membership in the component medical societies and state association be waived during the war, was unanimously adopted the following evening.

A resolution introduced by Dr. James L. Wade, of Parkersburg, providing for the continuance of the Publicity Committee, and the extension of its work, was also unanimously adopted at the second session. The full text of these two resolutions will be found under the heading, "Convention Transactions", in this issue of the Journal.

Program Committee for 1944

Dr. Robert J. Reed, Jr., of Wheeling, president-elect, submitted the following nominations for membership on the Scientific Work (Program) Committee for 1944: Dr. R. D. Gill, Wheeling, chairman; and Dr. T. L. Harris, Parkersburg, and Dr. J. P. McMullen, Wellsburg. These nominations were promptly confirmed by the House of Delegates.

Society and Section Officers

The various sections, at luncheons held at the Daniel Boone Hotel during the convention, elected the following officers:

Section on Eye, Ear, Nose and Throat: Dr. J. S. Maxwell, Fairmont, President; Dr. V. L. Lance, Charleston, Secretary.

West Virginia Heart Association: Dr. Frank Holroyd, Princeton, President; Dr. C. O. Post, Clarksburg, Vice President; and, Dr. John P. Helmick, Fairmont, Secretary.

West Virginia Obstetrical and Gynecological Society: Dr. W. E. Hoffman, Charleston, President; Dr. G. A. Ratcliff, Huntington, Vice President; and Dr. A. P. Hudgins, Charleston, Secretary-Treasurer.

Section on Surgery: Dr. J. B. Clinton, Fairmont, President; Dr. J. M. DePue, Spencer, Secretary.

At the dinner meeting of the Medical College of Virginia alumni, Dr. B. S. Brake of Clarksburg was elected President and Dr. W. P. Bittinger, of Summerlee, secretary. Guest speakers from the Medical College of Virginia included Dr. Claude C. Coleman, Professor of Neurosurgery, Dr. W. T. Sanger, President, and Dean Jacques P. Gray.

At the annual luncheon of the West Virginia Chapter of the American College of Physicians, Dr. Walter E. Vest of Huntington, was unanimously appointed acting governor of the West Virginia chapter for the duration.

Committees on Maternal and Child Welfare

The following members of the Committees on Maternal Welfare and Child Welfare were unanimously reelected by the House of Delegates:

Maternal Welfare: Drs. M. B. Williams, Wheeling; E. F. Heiskell, Morgantown; E. J. Humphrey, Huntington; H. G. Steele, Bluefield; W. E. Hoffman, Charleston.

Child Welfare: Drs. Raymond Sloan, Huntington; Carl Johnson, Morgantown; Russell Bond, Wheeling; Harlow Connell, Bluefield; A. A. Shawkey, Charleston; Theresa Snaith, Weston.

The president-elect, Dr. R. J. Reed, Jr., Wheeling, reappointed Dr. James R. Bloss, of Huntington, as Chairman of the Maternal Welfare Committee, and Dr. Thomas G. Folsom, of Huntington, as Chairman of the Child Welfare Committee.

1944 Convention Site

An invitation to hold the 1944 meeting of the West Virginia State Medical Association at Huntington was extended by Dr. W. C. Swann, of Huntington, on behalf of the Cabell County Medical Society, and Dr. R. J. Reed, Jr., president-elect, invited the Association to meet at Wheeling.

The House of Delegates referred the matter to the Council and the president-elect for a decision, and it is likely that a decision will be reached at the October meeting of the Council.

Press Coverage

The sessions of the convention were fully covered by the AP, the Charleston Gazette, and the Charleston Daily Mail. This wide coverage resulted in presenting to the public a vivid picture of the convention as a whole including scientific sessions, public meetings, elections, and scientific and commercial exhibits. The appreciation of the House of Delegates for this publicity was expressed in a resolution presented by Dr. James L. Wade, of Parkersburg, and unanimously adopted at the final session.

CONVENTION REGISTRATION

The following is a copy of the official registration of West Virginia doctors at the annual meeting in Charleston, May 17-18, 1943:

Mordecai Albrecht, Charleston; J. Paul Aliff Nellis; Andrew E. Amick, Charleston; Frederick E. Amick, Charleston; J. Howard Anderson, Hemphill; Randolph L. Anderson, Charleston; H. W. Angell, Charleston; Norman G. Angstadt, Charleston; Curtis P. Artz, Grantsville; L. L. Aultz, Ward.

R. E. Baer, South Charleston; Hugh A. Bailey, Charleston; J. B. Banks, Charleston; Daniel N. Barber, Charleston; T. M. Barber, Charleston; J. F. Barker, Huntington; Henry E. Baum, Charleston; Capt. Harry E. Beard, (MC), USNR, Huntington; Wm. F. Beckner, Huntington; Herbert M. Beddow, Charleston; W. P. Bittinger, Summerlee; O. B. Biern, Huntington; Ben W. Bird, Princeton; W. P. Black, Charleston; B. V. Blagg, South Charleston; Thomas H. Blake, St. Albans.

James R. Bloss, Huntington; John W. Bolen, Jr., Beckley; M. L. Bonar, Charleston; Russell C. Bond, Wheeling; H. W. Booth, Charleston; Ray M. Bobbitt, Huntington; W. D. Bourn, Barboursville; A. H. Bracey, Welch; A. Spates Brady, Jr., Charleston; B. S. Brake, Clarksburg; W. E. Brewer, Logan; C. N. Brown, Swansdale; Henry M. Brown, Charleston; Lawrence T. Browning, Elverton; S. W. Bull, Spencer; W. E. Bundy, Minden; A. P. Butt, Jr., Elkins.

John E. Cannaday, Charleston; G. B. Capito, Charleston; J. W. Carney, Logan; E. S. Carter, Jr., Boomer; Leo E. Christian, Huntington; R. D. Clark, Caretta; F. A. Clark, Charleston; C. Stafford Clay, Huntington; James B. Clinton, Fairmont; Charles H. Clovis, Wheeling; Claude C. Coleman, Richmond, Va.; T. R. Coleman, East Gulf; E. R. Cooper, Weston; Lloyd E. Cox, Charleston; Major Gilbert O. Crank, (MC), Lawton; D. J. Cronin, Huntington.

Raymond J. Dalton, Van; Ross P. Daniel, Beckley; C. A. Davis, Logan; E. A. Davis, Charleston; J. W. Davis, Fairmont; A. Morgan Dearman, Parkersburg; L. W. Deeds, Buckhannon; Duke A. Dent, Charleston; J. M. DePue, Spencer; Wm. S. Dick, Parkersburg; J. L. Dunlap, Nitro; N. H. Dyer, Bartley.

George W. Easley, Williamson; R. H. Edwards, Welch; W. Paul Elkin, Charleston; Maj. Welch M. England, (MC), Parkersburg; George P. Evans, Iaeger; H. P. Evans, Keystone.

H. H. Farley, Logan; Ivan Fawcett, Wheeling; H. H. Fisher, Dunbar; R. M. Fisher, Weston; Thomas G. Folsom, Huntington; S. A. Ford, Beckley; James W. Frazier, Charleston; Ralph A. Frazier, Gary.

John D. A. Gatsos, Charleston; Cole D. Genge, Huntington; Paul R. Gerhardt, Charleston; Richard D. Gill, Wheeling; Henry R. Glass, Charleston; Arthur E. Glover, Madison; W. T. Gocke, Clarksburg; William R. Goff, Parkersburg; B. I. Golden, Elkins; H. L. Goodman, Ronceverte; A. T. Gordon, Spencer; E. F. Gott, Charleston; D. E. Greeneltch, Wheeling; Geo. F. Grisinger, Charleston; H. D. Gunning, Ronceverte.

Josef J. Haber, Charleston; Peter A. Haley, Charleston; L. M. Halloran, Beckley; R. O. Halloran, Charleston; D. D. Hamilton, Mannington; O. L. Hamilton, Huntington; W. P. Hamilton, Logan; I. Hanenson, Charleston; L. R. Harless, Gauley Bridge; O. M. Harper, Clendenin; Thomas L. Harris, Parkersburg; E. C. Hartman, Parkersburg; H. H. Haynes, Clarksburg; O. L. Haynes, Charleston; H. C. Hays, Williamson; George P. Heffner, Charleston; E. F. Heiskell, Morgantown.

John P. Helmick, Fairmont; E. Bennette Henson, Charleston; L. O. Hill, Camden on Gauley; George D. Hill, Tioga; J. R. Hilsenbeck, Charleston; H. D. Hively, Ward; F. C. Hodges, Huntington; W. E. Hoffman, Charleston; Ralph Hogshead, Mammoth; L. I. Hoke, Nitro; V. E. Holcombe, Charleston; Frank J. Holroyd, Princeton; E. W. Horton, Bluefield; Marvin R. Houck, Carbon; L. G. Houser, Beckley; Harold H. Howell, Madison; A. P. Hudgins, Charleston; J. Ross Hunter, Charleston; J. C. Hutchinson, Welch; Jay L. Hutchison, Huntington; Troy H. Hutchinson, Malden.

Matthew A. Iatesta, Charleston; R. A. Ireland, Charleston; H. D. Ireland, Hopemont; Felix A. Irmen, Huntington; G. G. Irwin, Charleston.

S. W. Jabaut, South Charleston; Frank R. Jamison, Dehue; K. M. Jarrell, Beckley; Geo. D. Jeffers, Parkersburg; Carl E. Johnson, Morgantown; Archbold M. Jones, Parkersburg; Arthur S. Jones, Huntington; Wm. John Judy, Parkersburg.

H. S. Keister, Fairmont; John C. Kerr, Clarksburg; C. Royall Kessel, Ripley; Clark Kessel, Beckley; Don Kessler, Huntington; W. E. King, Montgomery; Capt. J. S. Klumpp, (MC), USNR, Huntington.

O. W. Ladwig, Wilsonburg; Lt. Col. L. R. Lambert, (MC), Charleston; Verne L. Lance, Charleston; Frank V. Langfitt, Clarksburg; H. D. Law, Charleston; John C. Lawson, Williamson; A. F. Lawson, Weston; J. L. Leef, Charleston; Lawrence R. Leeson, Morgantown; J. F. Lembright, Clarksburg; Archie C. Lewis, Seth; J. Preston Lilly, Charleston; Albert E. Long, Weston; J. W. Lyons, Holden.

J. I. Markell, Princeton; P. F. Marks, Walton; Henrietta L. Marquis, Beckley; C. B. Marshall, Nitro; Joseph S. Maxwell, Fairmont; M. I. Mendeloff, Charleston; H. M. Mican, Charleston; Guy H. Michael, Belington; A. W. Milhoan, Nitro; G. R. Miller, Fairview; Roy Ben Miller, Parkersburg; T. H. Millman, Earling; Lawrence H. Mills, Clarksburg; D. W. Mitchell, Ronceverte; James McClung, Richwood.

U. G. McClure, Charleston; J. S. R. McFall, Huntington; S. Elizabeth McFetridge, Martinsburg; D. A. MacGregor, Wheeling; C. Scott McKinley, Charleston; R. S. McLaughlin, Charleston; W. O. McMillan, Charleston; Wm. A. McMillan, Charleston; M. B. Moore, Huntington; T. W. Moore, Huntington; J. Hallock Moore, Huntington; G. P. Morison, Charles Town; M. T. Morrison, Sutton; O. Noel Morison, Charleston; Lyle A. Moser, Minden; Hu C. Myers, Philippi; Leo H. Mynes, Charleston.

Thomas W. Nale, Charleston; Louis H. Nefflen, Elkins; Lt. Charles A. Nelson, (MC), Huntington; R. C. Newman, Spencer; J. W. Niedermyer, Charleston; A. J. Niehaus, Wheeling; L. D. Norris, Fairmont; Chester R. Ogden, Clarksburg.

J. L. Patterson, Holden; Warren J. Parsons, Huntington; Lenore Patrick, Charleston; E. M. Peck, Charleston; Frank H. Penn, Mullens; H. M. Perkins, Charleston; D. C. Peters, Richwood; C. W. Petty, Hartford; Howard T. Phillips, Wheeling; Robert W. W. Phillips, Wheeling; R. O. Pletcher, Lost Creek; Walter W. Point, Charleston; C. O. Post, Clarksburg; C. W. Powell, Charleston; C. G. Power, Martinsburg; Robert B. Price, Charleston; S. M. Prunty, Parkersburg; A. M. Price, Charleston; Walter G. J. Putschar, Charleston.

M. M. Ralsten, Beckley; Gilbert A. Ratcliff, Huntington; Thomas G. Reed, Charleston; R. J. Reed, Jr., Wheeling; J. N. Reeves, Oak Hill; C. J. Reynolds, Bluefield; F. S. Richmond, Bluefield; J. L. Roark, Kimberly; R. W. Roberts, Man; H. L. Robertson, Charleston; J. H. Robinson, Charleston; R. O. Rogers, Bluefield; W. F. Rogers, Parkersburg; Charles B. Rohr, Alum Bridge; J. U. Rohr, Charleston; L. O. Rose, Parkersburg; W. S. Rowan, Logan; J. E. Rucker, Charleston.

David Salkin, Hopemont; S. L. Schreiber, Charleston; L. O. Schwartz, Weirton; C. N. Scott, Nitro; A. A. Seletz, Charleston; A. A. Shawkey, Charleston; W. F. Shirkey, Charleston; J. A. Shuman, Charleston; H. C. Skaggs, Montgomery; Thomas A. Slate, Hollidays Cove; Raymond M. Sloan, Huntington; M. J. Small, Parsons; Harry A. Smith, Charleston; R. G. Smith, Beckley; A. A. Smith, Clay; Theresa O. Snaith, Weston; George Snyder, Weston; L. Phelps Stanley, Charleston; R. C. Starcher, Ripley; W. H. St. Clair, Bluefield; J. H. Steenbergen, Huntington; Harry G. Steele, Bluefield; Wm. C. Stewart, Charleston; Frances M. Sullivan, Charleston; R. R. Summers, Morgantown; W. C. Swann, Huntington; H. A. Swart, Charleston; B. H. Swint, Charleston.

R. B. Talbott, Martinsburg; I. W. Taylor, Huntington; Harry V. Thomas, Clarksburg; J.

B. Thompson, Oak Hill; J. L. Thompson, Weirton; James Thompson, Morgantown; E. B. Thompson, Montgomery; E. A. Trinkle, Weston; Eldon B. Tucker, Morgantown.

Edward J. Van Liere, Morgantown; R. Stuart Van Metre, Huntington; Edwin O. Vaughan, St. Albans; Walter E. Vest, Huntington; H. R. W. Vial, Charleston.

James L. Wade, Parkersburg; C. E. Watkins, Harvey; C. A. Willis, Huntington; C. G. Willis, Huntington; J. E. Wilson, Clarksburg; Wirt B. Wilson, Charleston; A. A. Wilson, Charleston; R. J. Wilkinson, Huntington; E. M. Wilkinson, Pineville; S. D. H. Wise, Parkersburg; E. D. Wise, Fairmont; E. B. Wray, Stotesbury; Chauncey B. Wright, Huntington; R. M. Wylie, Huntington; Joe Yost, Fairmont.

Other Visitors

Robert E. Anderson, Jr., Richmond, Va.; J. R. Ardit, Cincinnati, O.; Ellen P. Bottinore, Richmond, Va.; Dorothy V. Bradley, Little Falls, N. Y.; R. W. Burrill, Charleston; E. R. Clinton, Philadelphia, Pa.; Claude C. Coleman, Richmond, Va.; Dr. A. Wilbur Duryee, New York, N. Y.; First Lt. C. M. French, (MC), San Antonio, Texas; O. W. Funk, Cincinnati, Ohio; Steve Furches, Charleston; A. B. Ginden, Charleston; Dr. Henry Goodyear, Cincinnati, Ohio; Dr. J. P. Gray, Richmond, Va.; R. F. Hightower, Charleston; R. H. Hilbert, Cincinnati, Ohio; Eugene R. Hollar, Duquesne, Pa.; A. L. Hostnick, Pittsburgh, Pa.; George J. Hulcher, Richmond, Va.; Thomas G. Hull, Chicago, Ill.

C. W. Hunter, Pittsburgh, Pa.; E. G. Johnson, Richmond, Va.; Lt. Col. William D. Keller, MC, Cleveland, Ohio; L. Keith Kloman, Charleston; H. R. Lemley, Clarksburg; E. W. Mahan, M. D., West Alexander, Pa.; E. L. Maines, Richmond, Va.; Robert J. Marsh, Huntington; R. M. Marshall, Charleston; Frank B. McCormack, Little Falls, N. Y.; First Lt. O. B. McCoy, M. D., Arkansas Medical Society; H. W. McDanel, Shadyside, Ohio; Lt. Comdr. B. E. Montgomery, (MC), USNR, Charleston; Dr. John J. Moorhead, New York City; Ralph Mosteller, Beckley; J. F. Muller, New York; Lieut. I. Ostrow, MC, Poughkeepsie, N. Y.; Dr. George T. Pack, New York, N. Y.

R. B. Parker, Charleston; Eason G. Pritchard, Bluefield; Wm. A. Quinn, M. D., Portsmouth, Ohio; Brig. Gen. Fred W. Rankin, MC, U. S. Army, Lexington, Ky.; R. E. Roberts, Moorefield, Va.; H. Rodeheaver, Clarksburg; Ralph W. Ryan, Charleston; Dr. W. T. Sanger, Richmond, Va.; Paul J. Hines, Philadelphia, Pa.; Dr. W. H. Sebrell, USPHS, Bethesda, Md.; Horatio A. Spector, Charleston; F. W. Steiner, M. D., Havre de Grace, Md.; Charles Stevens, Detroit, Mich.; Thomas W. Stores, Pittsburgh, Pa.; Col. H. H. Taylor, U. S. Army; R. A. Thetford, Williamson; Chas. E. Voddkin, Fairmont; Fred Walls, Jr., Charleston; E. D. Wells, Charleston; W. R. Yohe, Glen Campbell, Pa.; E. D. Zellers, Norfolk, Virginia.

MERIT SYSTEM COUNCIL EXAMINATIONS

Examinations for several positions in the West Virginia State Health Department and the Department of Public Assistance have been announced by the Merit System Council. Applications will be accepted continuously, but new registers will be established from applicants who file not later than June 26, 1943.

Applications are being accepted for the following positions:

Director of Maternal and Child Hygiene, $4200 to $4800; Assistant Director, Maternal and Child Hygiene, $3840 to $4500; Director, Industrial Hygiene, $4200 to $4800; Director, Vital Statistics, $4200 to $4800; Director, Communicable Diseases, $4200 to $4800; Assistant Director of Communicable Diseases (Tuberculosis), $3840 to $4500; Assistant Director of Communicable Diseases (Venereal Diseases), $3840 to $4500; Venereal Disease Consultant, $3840 to $4500; Director, Bureau of Dental Hygiene, $3840 to $4500; Director of County Health Work, $4200 to $4800; Senior Health Officer, $3840 to $4500; Junior Health Officer, $3360 to $3840; Health Officer Trainee, $2400; Assistant Director, Hygienic Laboratory, $2640 to $3240; Senior Bacteriologist, $1800 to $2400; Senior Serologist, $1800 to $2400; Consultant Nurse in Special Fields, $2400 to $3000; Public Health Nursing Supervisor (State), $1920 to $2400; Public Health Nursing Supervisor (Local), $1800 to $2040; Chief of Medical Services, $4800 to $5280.

Applications should be addressed to the Merit System Council, 212 Atlas Building, Charleston, W. Va.

MRS. JOHN P. HELMICK NEW PRESIDENT WOMAN'S AUXILIARY

One of the most enthusiastic and largely attended meetings ever held in the history of the Woman's Auxiliary to the West Virginia State Medical Association came to a close Tuesday afternoon, May 18, with adjournment of the post-convention meeting of the Executive Board, at the Daniel Boone Hotel in Charleston.

The total attendance of 116 was far in excess of the registration at the last meeting in Huntington in 1942. The two luncheons sponsored by the Auxiliary, were well attended and the convention itself drew a large crowd. Over ninety guests were present at a tea held at the home of Mrs. U. G. McClure, President of the Auxiliary to the Kanawha Medical Society.

Officers for 1943-44

Mrs. John P. Helmick of Fairmont, who was elected President in 1942, was installed in office by Mrs. V. E. Holcombe, past state President.

Mrs. John P. Helmick, Auxiliary President

Mrs. John P. Helmick, wife of Dr. John P. Helmick, of Fairmont, West Virginia, was installed as president of the Woman's Auxiliary to the West Virginia State Medical Association at the annual meeting in Charleston, May 17-18, 1943. She is a member of the Marion County Auxiliary, and has always been active in the work of the State Auxiliary, serving as chairman of the Committee on Public Relations, 1941-42. She was named president-elect at the meeting in Huntington in 1942. Mrs. Helmick succeeds Mrs. Ralph Hogshead, of Mammoth, as President of the Auxiliary.

Additional officers were elected as follows: Mrs. H. P. Evans, Keystone; Mrs. W. E. Hoffman, Charleston; Mrs. N. L. Haislip, Wheeling and Mrs. H. D. Gunning, Ronceverte, vice presidents; Mrs. Archbold M. Jones, Parkersburg, recording secretary; Mrs. J. W. Davis, Fairmont, corresponding secretary and Mrs. J. W. Carney, Logan, treasurer.

At the meeting held May 18, Mrs. Scott A. Ford, of Edwight, was elected President for 1944-1945.

Committees

The President announced the appointment of the following as chairmen of standing committees: Archives, Mrs. U. G. McClure, Charleston; finance, Mrs. John Trach, Fairmont; historian, Mrs. K. Y. Swisher, Fairview; Hygeia, Mrs. Upshur Higginbotham, Montgomery; legislation, Mrs. A. F. Lawson, Weston; parliamentarian, Mrs. Harry V. Thomas, Clarksburg; publicity, Mrs. Carl Chandler, Bridgeport; public relations, Mrs. Newton DuPuy, Beckley; revisions, Mrs. Delmar Greeneltch, Wheeling; bulletin, Mrs. O. D. Barker, Parkersburg; Southern Medical representative, Mrs. Welch England, Parkersburg; speakers, Mrs. V. E. Holcombe; and special projects, Mrs. Ralph Hogshead of Mammoth.

REGULAR MEETING OF COUNCIL

The regular meeting of the Council of the West Virginia State Medical Association was held at the Daniel Boone Hotel, Charleston, Sunday afternoon, May 17, 1943. The meeting was called to order at 5:30 o'clock by Dr. R. O. Rogers, Chairman.

In addition to Dr. Rogers, the following members were present: Dr. R. J. Wilkinson, Huntington, President; Dr. T. M. Barber, Charleston, Treasurer; and Councillors J. B. Clinton, Fairmont; Carl E. Johnson, Morgantown; Guy H. Michael, Belington; L. W. Deeds, Buckhannon; C. O. Post, Clarksburg; Raymond Sloan, Huntington; James L. Wade, Parkersburg; George W.

Easley, Williamson, Frank Holroyd, Princeton; H. L. Goodman, Ronceverte; Andrew E. Amick, Charleston; and Mr. Charles Lively, Executive Secretary.

The meeting was also attended by Drs. O. B. Biern, James R. Bloss, and W. E. Vest, Huntington; Dr. J. C. Lawson, Williamson; and, Dr. Wm. T. Gocke, Clarksburg.

On motion of Dr. Michael, the Secretary was directed to extend to Dr. Robert K. Buford, past president, the sympathy of the members of the council in his illness and to express the hope that he would soon be restored to good health. And, on motion of Dr. Rogers, the secretary was directed to send to Dr. Buford flowers from the Association.

State Health Department Project

The secretary read letters from Dr. C. F. McClintic, State Health Commissioner and Dr. Lenore Patrick, Director Division of Maternal and Child Hygiene, State Department of Health, with reference to proposed medical care for wives and infants of enlisted men in the armed forces of the United States. The secretary also read the mimeographed pamphlet containing information for physicians and hospitals participating in the program, which has been mailed to all doctors and hospitals in West Virginia.

After full discussion of the proposition, the program as outlined by Drs. McClintic and Patrick was, on motion of Dr. Clinton, seconded by Dr. Holroyd, accepted.

Report of Executive Secretary

Mr. Charles Lively, Executive Secretary, reported that, as of that date, only 16 of those who had paid 1943 dues had failed to pay the special assessment levied by the House of Delegates at the annual meeting in Huntington in 1942. The Executive Secretary stated that his annual report would be submitted to the House of Delegates at the first session the following evening.

Planning Committee

The appointment of a Fact Finding and Planning Committee by the President, heretofore authorized individually by the members, was on motion of Dr. Sloan, approved with the understanding that one additional member of the committee is to be appointed from the Eastern Panhandle section of the state.

Dr. Bobbitt, Chairman of the Committee, submitted an oral report concerning the initial organization meeting that was held that afternoon. A more complete report was to be submitted to the House of Delegates the following evening.

On motion of Dr. Wade, the Executive Secretary was authorized to pay from Association funds the necessary expenses of the Fact Finding and Planning Committee in an amount not to exceed $500.

Honorary Life Members

On motion of Dr. Amick, seconded by Dr. Michael, the following doctors were elected as honorary life members of the Association:

Dr. W. P. King, Weston; Dr. George Snyder, Weston; Dr. A. L. Amick, Charleston; Dr. J. H. Hansford, Pratt; Dr. W. A. McMillan, Charleston; Dr. W. C. Camp, Spencer; Dr. J. R. McCollum, St. Marys; Dr. E. W. Crooks, Dr. Roy Ben Miller, Dr. Lonzo O. Rose, and Dr. E. L. Wright, all of Parkersburg; Dr. J. S. Moloy, Shinnston; and, Dr. M. F. Wright, Burlington.

Affiliate Membership in A. M. A.

On motion of Dr. Amick, seconded by Dr. Michael, the following doctors were nominated for Affiliate Fellowship in the American Medical Association: Dr. Charles E. Copeland, and Dr. H. H. Staats, Charleston.

Revision of Constitution and By-Laws

The President was, on motion of Dr. Sloan, directed to appoint a committee of three members to revise the Constitution and By-Laws, the report to be submitted to the Council for approval prior to the next session of the House of Delegates in 1944.

Dr. Post reported the substance of a resolution adopted by the Harrison County Medical Society with reference to the election to membership in county societies and the State Association of all doctors completing their internship and residency and accepting immediate commission in the armed forces, and he was directed to present the matter to the House of Delegates at the first meeting.

The Secretary read a letter from Dr. C. F. McClintic, State Health Commissioner, transmitting a communication from Dr. Julian F. Dubois, of Sauk Centre, Minnesota, with reference to a resolution that will be presented to the House of Delegates of the American Medical Association at its meeting in June, concerning the establishment of a medical information bureau in Washington, and asking that the West Virginia delegation be instructed to vote for the resolution.

On motion of Dr. Sloan, seconded by Dr. Clinton, the delegates were directed to use their own discretion with reference to what steps should be taken, but the view was expressed that it would be much preferable that a step such as was outlined should be taken by some organization within the medical profession other than the American Medical Association.

The Council unanimously directed that the salary of Miss Catherine Clarkson, member of the headquarters staff, be increased in the amount of $25 per month.

THREE PRESIDENTS IN FAMILY

The members of the family of Dr. Robert J. Reed, Jr., of Wheeling, president-elect of the West Virginia State Medical Association, have been closely identified with the West Virginia State Medical Association since its establishment 76 years ago.

Dr. Reed's mother, who was Louise Butler, was the granddaughter of Dr. W. J. Bates, of Wheeling, who was elected the first president of the Association at the organization meeting at Fairmont in 1867. His father, Dr. Robert J. Reed, who at 84 years of age is still active in the practice of medicine at Wheeling, served as president in 1919.

The election of Dr. Robert J. Reed, Jr., marks the first time that the son of a former president has been elected to this office since the Association was founded in 1867.

NEW PLANNING COMMITTEE MEETS

The organization meeting of the Fact Finding and Planning Committee of the West Virginia State Medical Association was held at the Daniel Boone Hotel, Charleston, May 16, 1943, with all members present as follows:

Dr. Ray M. Bobbitt, Huntington, Chairman; Drs. D. A. MacGregor, Wheeling; T. L. Harris, Parkersburg; J. P. Helmick, Fairmont; Frank V. Langfitt, Clarksburg; Carl E. Johnson, Morgantown; Frank J. Holroyd, Princeton; B. H. Swint, Charleston, and Hu Myers, Philippi.

The chairman outlined a plan whereby the various matters now before the committee for discussion and ultimate decision might be handled. The plan includes the appointment of three subcommittees. The whole committee will meet in late summer and the sub-committees will then undertake the work before them and render reports at a meeting to be held next winter.

AWARDED SILVER STAR MEDAL

Lt. John R. Godbey, (MC), USNR, of Charleston, has been awarded the Silver Star medal, according to information received by his sister, Miss Betty Godbey, of that city. The citation is as follows:

"For conspicuous gallantry and intrepidity in action against the enemy. During the offensive action in the Matanikau river area, Guadalcanal, Solomon Islands, on Nov. 3, 1943, Lieutenant Godbey was outstanding in the performance of his duty on the front lines during the time his battalion was in hand to hand combat with the enemy.

"With total disregard for his safety, Lieut. Godbey remained on the front assault line and advanced forward with it, taking care of the wounded, supervising evacuation, and carrying out his duties to the fullest extent.

"Throughout most of the time of his advance, the area was covered with enemy machine gun, mortar and rifle fire. Twice during this period Lieut. Godbey was blown from his feet by the concussion of enemy mortar shells."

Lt. Godbey served in the Guadalcanal area from September to December, 1942. He was with the marines when they landed on Tulagi in the Solomons last August. He is still in active service in the Southwest Pacific.

DR. V. E. HOLCOMBE HONORED

Dr. V. E. Holcombe, of Charleston, has been named as a member of the Medical Liaison Committee of the National Society for the Prevention of Blindness, the appointment being made by Miss Eleanor Brown Burrill, Executive Director. The Committee is composed of ophthalmologists from different parts of the country and the members will be consulted frequently with reference to various aspects of the society's program.

Dr. Holcombe is Chairman of the Committee on Conservation of Vision of the State Medical Association. The other members are Major Welch England, (MC), of Parkersburg and Dr. R. A. Tomassene, of Wheeling. A survey of industrial plants is now under way, and information is being obtained from the state institutions for the blind concerning pathological classification of cases, and

educational and rehabilitation programs that may now be in operation.

PRISONER OF JAPS

Lt. Edwin R. Nelson, (MC), of Logan, is a prisoner of the Japanese in the Philippines, according to information received by his father and mother, Mr. and Mrs. C. P. Nelson, of Huntington. Information was transmitted through the Navy's Prisoner of War Information Bureau, which has received a list of prisoners from official Japanese sources through the government of Switzerland.

Lt. Nelson served throughout the Bataan campaign, and his hospital was severely bombed while he was performing an operation. He was evacuated to Corregidor when Bataan fell. He continued in service on Corregidor until its fall on May 6, 1942.

Lt. Nelson was heretofore cited by the navy for heroism under fire during the siege of Bataan. He entered the service in January, 1941, and served in a hospital unit at San Diego until being transferred to the Philippines in June of that year.

VENEREAL DISEASE CONTROL PROGRAM

The following recommendations for a venereal disease control program in industry were included in the report of the Advisory Committee on the Control of Venereal Diseases, United States Public Health Service, of which Dr. Otis L. Anderson, Washington, D. C., is chairman:

In order to assemble current authoritative information and to formulate basic principles applicable to a program of venereal disease control in industry, the Surgeon General has appointed an Advisory Committee to the United States Public Health Service. This Committee has outlined the objectives of such a program as:

A. Medical and Public Health:

1. To find and refer for proper medical management all cases of venereal diseases among workers in industry.

2. To establish equitable policies for the employment of applicants and continuation of services of employees who have venereal diseases.

3. To coordinate the community and industrial venereal disease control programs.

B. Employee:

1. To improve the physical condition of employees.

2. To reduce the number of work days lost through illness or injury.

3. To provide job placement.

4. To prolong and increase the earning power of employees.

C. Employer:

1. To reduce compensation costs.

2. To lessen work interruptions and labor turnover.

3. To enhance production by increasing the efficiency of workers.

4. To minimize personnel problems.

In order to assure agreement on all phases of fundamental policy, the committee recommends that certain agencies be consulted in carrying out this program: the state labor department, industrial commission or similar department of state government; the appropriate committee of the state medical society; the association representing employers; the labor organizations; appropriate voluntary health and welfare associations.

Responsibility for the administration of the program should be shared by the industrial hygiene and venereal disease divisions of the state health department. The program should not be inaugurated without a complete educational program. The employee should be convinced that adequate treatment protects both his health and his ability to earn a living, and the employer that not all cases of venereal disease are infectious, through an educational program before venereal disease control measures are introduced.

In order that the control program may be effective, preemployment examinations should be mandatory for all workers. Laboratory tests for syphilis and gonorrhea should be made a part of the periodic, reemployment or "return from illness" physical examinations which are the policy of the industry. The interval between examinations should under no circumstances be more than three years.

It is of utmost importance that the results of the medical examination be considered confidential between the worker and the medical staff. Information should be furnished to others only with the consent of the individual concerned or, failing this, on legal advice. The medical staff should make proper recommendations to the management as to the physical fitness of the employee for work. When the usual clinical record is kept in an open file, venereal disease forms should be filed in the medical department for the use of the medical staff only.

There is no reason for denying employment to

an applicant or for discharging an employee because an examination has revealed evidence of syphilis or gonorrhea, provided:

1. That the employee agrees to place himself under competent medical management.

2. That, if the disease is in the infectious stage, employment should be delayed or interrupted until such time as a noninfectious state is established through treatment and open lesions are healed.

3. That when syphilis exists in a latent stage, employment should not be delayed nor interrupted.

4. That employment may be deferred or denied when the individual is an industrial hazard.

5. That occupational readjustments of employees be made of individuals developing disabling manifestations.

6. That workers with syphilis in any of its stages be excluded from areas where there is exposure to chemicals which may produce toxic reactions, and those having cardiovascular syphilis or neurosyphilis should not be exposed to physiologic stresses.

7. That workers with gonorrhea should be allowed to work only under special medical observation during the administration of sulfonamide drugs.

The applicant or the employee whose examination reveals evidence of a venereal disease should be called to the industrial physician's office for a conference. He should be instructed as to the nature of the disease which he has in order that he may cooperate intelligently with the requirements of the program. He should be referred to a reputable source for medical attention and be furnished with a letter directed to his physician stating the results of the examination and what is expected of the employee as to regularity of treatment if he is to be employed. The industrial physician should receive a record of treatment at about monthly intervals. The names of individuals who have neglected or refused treatment should be turned over to the health department for appropriate action in bringing them back to treatment.

The plant physician making a tentative diagnosis of communicable syphilis or gonorrhea should without delay acquaint the appropriate health authority with the facts.

NATIONAL GASTROENTEROLOGICAL ASSN.

An effort is now being made to establish a West Virginia Chapter of the National Gastroenterological Association. Dr. Roy Upham, of New York City, is President of the New York Chapter, and he has requested Dr. Ludwig Frank, of Charleston, to assist in the organization. Interested physicians are requested to communicate with Dr. Frank at 1570 Kanawha Boulevard, East, Charleston.

BIBLIOGRAPHY ON POLIO LITERATURE

A project designed to make the National Foundation for Infantile Paralysis the only complete central, authentic source of information on poliomyelitis in the world has been announced by Basil O'Connor, President of the Foundation.

A complete bibliography of all scientific literature that has ever been published pertaining to infantile paralysis is being compiled, and the book will be ready for publication early in 1944. The first volume will contain a record of all scientific material on infantile paralysis published anywhere in the world up to the close of the year 1943.

"UNTIL I COME BACK"

When we read recently in National Advertising the nostalgic copy of the Nash-Kelvinator Corporation, so appealingly expressed under the above title, we wished for something akin which might refer more specifically to the family doctor. As with many a good resolution, we forgot our determination to write Nash-Kelvinator asking if we might make use of their copy, but today there comes to the editor's desk a communication from Nash-Kelvinator stating that we might "with or without credit" quote from their advertisement. Here, therefore, we quote the last few paragraphs:

"Until I Come Back"

"* * * They say America will be a lot different after this war.

"Well, maybe so.

"But as for me, I know the score * * * you learn fast over here. I know now there's only one decent way to live in this world—the way my folks lived and the way I want to live.

"When you find a thing that works as good as that—brother, be careful with that monkey wrench.

"And there's one little spot—well, if they do as much as change the smell of the corner drug store —I will murder the guy.

"I want my girl back, just as she is, and that bungalow on Maple Avenue. * * *

"I want that old roll-top desk of mine at the electric company, with a chance to move upstairs, or quit if I want to.

"I want to see that old school of mine, and our church, just as they are—because I want my kids to go there.

"That's my home town. * * *

"Keep it for me the way I remember it, just the way I see it now—until I come back."

We are confident that medical readers at least will be able to read into this simple story a reference to the absent family doctor or even to sign after the last short paragraph the name of a well-known local practitioner now far afield in the service of our armed forces after he had added such simple lines as these:

"Keep for me my familiar and much-appreciated place in the respect and memory of my former patients.

"Maintain for me my rank in my county medical society.

"Let those who remain hard at work in the hometown hospital know that I am looking forward to an early return to *take my place with them in the service of our own community*."—The Pennsylvania Medical Journal.

CHANGES IN LOCATION

Dr. J. C. Arnett, of Eglon, has located at Rowlesburg, and Dr. B. B. Sturdivant, of the latter city, has moved to Point Pleasant.

Dr. Reece M. Pedicord, of Wheeling, is now a member of the medical staff at the Tule Lake Project, Newell, California.

Dr. Guy Hinsdale, formerly medical director at the Greenbrier Hotel, White Sulphur Springs, and lately located at Lewisburg, has moved to Ogunquit, Maine.

Dr. Boyce Elliott has recently located for the practice of his professoin at Pocahontas, Virginia. He was formerly located at Hemphill.

Two Gary doctors have moved to other states, Dr. Hawes Campbell, Jr., locating at Staunton, Virginia, and Dr. William A. Rose at Webster Groves, Missouri.

Dr. Louis H. Nefflen has moved from Holden to Elkins, and Dr. E. C. Lane from Pineville to Mallory.

Dr. John Hodges, formerly of Martinsburg, is now located in Philadelphia.

Dr. Jesse T. Johnson, of Hinton, has moved to Lawton.

Dr. J. A. Smith, of South Charleston, is now located at Sanford, Florida.

County Society News

BOONE COUNTY

Officers and delegates were elected at a business meeting of the Boone County Medical Society which was held at Racine, April 23, 1943, at 8 P. M. as follows:

President, Dr. W. F. Harless, Madison; Vice President, Dr. J. Paul Aliff, Nellis; Secretary and Treasurer, Dr. A. C. Lewis, Seth; Delegate, Dr. H. H. Howell, Madison; and Alternates, Dr. W. V. Wilkerson, Prenter, and Dr. W. F. Harless, Madison.

Dr. Theodore Gallup, of Sharples, West Virginia, was admitted to the Society as a new member.

A. C. LEWIS, M. D.,
Secretary.

CABELL COUNTY

Dr. Lee Sutton, Jr., Dean and Professor of Pediatrics at the Medical College of Virginia, Richmond, and Dr. Harvey B. Haag, Professor of Pharmacology at the same institution, were guest speakers at the regular monthly meeting of the Cabell County Medical Society held at the Hotel Prichard, Huntington, Thursday evening, May 13, 1943. Dean Sutton spoke on "The Use of Sulfonamides in the Treatment of Pneumonia and Meningitis." Dr. Haag discussed "The Pharmacology of the Sulfonamides."

COLE D. GENGE, M. D.,
Secretary.

FAYETTE COUNTY

Dr. Ralph Mosteler, of Beckley, was the guest speaker at the regular monthly meeting of the Fayette County Medical Society, at Laird Memorial Hospital, Montgomery, April 20. His subject was "The Clinical and Pathological Diagnosis of Carcinoma of the Breast."

An interesting case of brain tumor was presented during a clinicopathological discussion led by Dr. J. B. Thompson, of Oak Hill.

E. S. CARTER, JR., M. D.,
Secretary.

KANAWHA COUNTY

At the regular monthly meeting of the Kanawha Medical Society, held at the Daniel Boone Hotel, Charleston, Tuesday, May 11, at 8 P. M. the film, "Some Manifestations and Treatment of Syphilis",

was shown through the courtesy of the United States Public Health Service.

Papers on the "Treatment of Syphilis" were presented by Dr. L. S. Saler and Dr. F. C. Kluth, of the Public Health Service.

Dr. W. A. McMillan, of Charleston, was elected to honorary membership in the Society.

GEORGE P. HEFFNER, M. D.,
Secretary.

LOGAN COUNTY

Mrs. Winifred Way Wencke, of Stollings, head of Friends' Health Service, delivered the principal address at the regular meeting of the Logan County Medical Society, Wednesday, April 28, at the Aracoma Hotel, Logan. Mrs. Wencke spoke concerning her impressions of the Sister Kenny method of treating poliomyelitis, gained by her personally at the University of Minnesota. The address was intensely interesting to all the members present.

T. H. MILLMAN, M. D.,
Secretary.

MERCER COUNTY

At the regular monthly meeting of the Mercer County Medical Society, held at the Municipal Building, Bluefield, April 22, 1943, at 8, P. M., an interesting program was presented by members of the society. Addresses were delivered as follows:

Dr. E. W. Horton, "Episiotomy"; Dr. H. G. Steele, "Therapeutics of the Common Cold"; Dr. Otto Hochfeld, "Treatment of Varicose Ulcers with Leeches"; and, Dr. F. V. Gammage, "Epidemic Kerato-Conjunctivitis."

FRANK J. HOLROYD, M. D.,
Secretary.

Doctors in the War

400th DOCTOR COMMISSIONED

Dr. Harold Moore, of Charleston, is the 400th West Virginia doctor to accept a commission in the armed forces of the United States. Dr. Moore, who has served as a resident at Charleston General Hospital for the past few months, has been commissioned a first lieutenant in the army, and has reported for duty.

Book Reviews

"The Kenny Concept of Infantile Paralysis, and Its Treatment", by John F. Pohl, M. D., in collaboration with Sister Elizabeth Kenny. Bruce Publishing Company, St. Paul, Minneapolis. 368 pages, 114 pictures, cloth binding, $5.00.

Sister Kenny's participation in the recent meeting of the State Medical Association aroused much interest in her method of treating infantile paralysis. A review of the above named book is thought to be timely. The foreword by Frank R. Ober, M. D., President of the American Orthopedic Association and Assistant Dean of Harvard Medical School, is submitted in place of any comments by the reviewer:

"This volume on infantile paralysis is an up-to-date discussion of the techniques now being advocated by Sister Elizabeth Kenny. The reader will find a well-conceived plan for the relief of pain and muscle spasm by the early and continued use of hot packs and a well-defined plan for reeducation of the neuromuscular system.

"The idea of moist heat is not new since one will find in the writings of Lovett and his coworkers that hot packs were advocated and used in 1916, and were found to relieve the deep pain and tenderness that is associated so often with this disease. However, they were used only two or three times a day and for one-half hour periods, and the patients were not seen until after the quarantine period.

"The method for the application of hot packs as used by Sister Kenny begins when the diagnosis is made, and the packs are applied, as described in the book, for the relief of muscle spasm. There is no doubt in my mind that by this method the pain disappears more quickly than by any other and stiffness is avoided.

"Sister Kenny puts great emphasis on muscle spasm in the affected muscles. One does not find mention of muscle spasm in textbooks, but there is no doubt that it is present and is a great factor in the production of early deformities unless relieved.

"Mental alienation of muscles is another term used in the book, and does occur even in other conditions in which there is no paralysis.

"Braces and splints are not used to prevent early deformities since they make extremities stiff and increase muscle spasm. If the Kenny technique,

with its continuous superb nursing, is followed, the physician will find that the affected parts become soft and relaxed, limitation of motion is not so persistent, and pain subsides remarkably early as compared to other methods. The physical therapist will find that close application of the technique described in the book wlil gain the maximum amount of recovery more quickly and much more satisfactorily than by the techniques previously employed.

"It is my personal belief that this book should be perused and used by all interested in the welfare of those who are afflicted with poliomyelitis."

The Principles and Practice of War Surgery

J. Trueta, M. D.

C. V. Mosby Co., St. Louis, 1943

This well written treatise is based on the author's experience in the recent Spanish war. He is at present residing in England and the book is written in excellent English, apparently not having been translated.

Trueta's main theme is the value of the so-called Orr method in the treatment of wounds and compound fractures encountered in war. In this method, the wound is debrided, all dead tissue removed and vaseline gauze used to fill the wound. Then a plaster cast is applied and the patient evacuated to a base hospital. By this means, the injured tissues are placed at rest, adequate drainage is provided and the wounds heal more rapidly than by any other previously used method. The encasement of the injured limbs in plaster also permits the patients to be moved easily and without resulting pain and shock.

He fully discusses the value of the various sulfonamide drugs and feels that sulfanilamide, sulfapyridine and sulfathiazole have been of great benefit in the treatment of war wounds.

The use of plasma and whole blood is gone into in detail and the tremendous help occasioned by having plasma at hand when large numbers of wounded are brought in, is well brought out.

He stresses the "biological" method of treatment by which he means that the surgeon reinforces Nature's effort by excising the wound, thus eliminating dead tissues and hastening repair. In immobilizing the injured limb, Nature is assisted by preventing motion in the affected region and obviating the disadvantages of persistent muscular spasm.

—Howard A. Swart, M. D.

Reducing Employee Absenteeism

Primary responsibility for reducing both illness and accidents in war industries rests with the individual workman. He must protect his health by taking care of himself, paying proper attention to minor illnesses, and avoiding excessive indulgences. He must devote an adequate amount of his time to rest. His job is, in its own way, as vital as that of the soldier. He has a patriotic duty to keep himself fit for his job.

An equal share of responsibility rests with the management. It must provide safeguards against accidents, school the inexperienced, and police its plans to detect and correct carelessness. Further, all industry should note the record made by industries which, through provision of proper medical service for the protection of their employees, have checked illness to an extent that time loss from this source has been reduced by as much as 50 per cent.

A day lost from war industry by illness or injury becomes just as costly to the nation's combat forces as a similar day lost by a labor strike or any other preventable cause.

Dr. Stanley J. Seegar, Chairman of the Council on Industrial Health of the American Medical Association, in a recent address turned the spotlight on the fact that each 40-hour week really contains 128 additional hours making up the calendar week, during which period social conduct plays an important rôle in employee absenteeism in all essential war production.

This affords a fine field for the family practitioner to help keep the war worker well through good advice in the prevention of fatigue, in the control of diet and of time devoted to relaxation.—*Pennsylvania Medical Journal.*

More Help For Milk-Allergic Patients

Appetizing and nutritious recipes for using Mull-Soy in milk-free diets are now available in a new publication of Borden's Prescription Products Division. Already widely prescribed as a hypoallergenic substitute for milk in infant formulas, Mull-Soy is now proving equally useful in diets of older infants, children and adults who are allergic to milk.

These Mull-Soy recipe folders are designed for distribution by physicians to their patients. Any desired number of copies may be obtained by writing to Borden's Prescription Products Division, Department CB, 350 Madison Avenue, New York 17, N. Y.

WITH DOCTORS IN THE SERVICE

AT HOME

Dr. O. D. Ballard, of Van, has been promoted from Lieutenant to Captain. He is with the Medical Detachment, 350th AAA, at Winter Garden, Florida.

* * *

Capt. Philip L. Becker, of Kimberly, has just recently returned from maneuvers and is now on detailed service with the Medical Detachment, 23rd Armored F. A., Bn., at Camp Cooke, Cal.

* * *

Capt. C. H. Boso, of Huntington, is now with the Station Hospital at Camp Barkley, Texas.

* * *

Dr. A. C. Chandler, of Charleston, has been promoted from Captain to Major. He is in charge of the EEN&T Department, and is Assistant Chief of the Surgical Section in the 111th Station Hospital at Camp Wheeler, Macon, Georgia.

* * *

Dr. J. R. Cooke, of Huntington, who is attached to the 300th General Hospital at Camp Forest, Tennessee, has been promoted from Captain to Major.

* * *

Dr. George F. Evans, of Clarksburg, who is attached to the 29th Station Hospital, Camp Rucker, Alabama, has been promoted from Captain to Major.

* * *

Lt. H. M. Escue, of Charleston, who has been attached to the Station Hospital at Scott Field, Illinois, has been transferred. .

* * *

Capt. Emery W. Garred, MC, of Huntington, is with the Station Hospital at Ft. McClellan, Alabama.

* * *

Capt. James L. Hager, of Charleston, who was called into active service in the army in May, 1942, was assigned to duty with his unit overseas in July of that year. Information has now been received by members of his family that he is in charge of the medical staff on the first U. S. Army hospital train to operate in Australia.

Maj. Sobisca S. Hall, of Clarksburg, is serving as Chief of the EEN&T and Facio-Maxillary Department at the Station Hospital, Keesler Field, Mississippi.

* * *

Capt. Richard Hamilton, of St. Marys, is attached to the 113th Medical Battalion at Camp Livingston, Louisiana. He reports that Maj. P. F. Schaefer, prominent Charleston dentist, is the Division dental surgeon at Camp Livingston.

* * *

Maj. E. W. McCauley, of Rainelle, is attached to the 34th Evacuation Hospital at Camp Barkeley, Texas.

* * *

Capt. V. L. Peterson, of Charleston, is attached to the x-ray department at Fitzsimons General Hospital, Medical Department Technicians School, Denver, Colorado.

* * *

Dr. Paul H. Revercomb, of Charleston, has just transferred from Camp Grant, Illinois, to the staff at Station Hospital, Monroe, North Carolina.

* * *

Maj. Pat A. Tuckwiller, of Charleston, who has been stationed at Camp Atterbury, Maryland, for the past several months has been transferred to Washington, D. C., for special training.

* * *

OVERSEAS

Capt. Harry E. Baldock, of Charleston, is on active duty with the American forces in the Middle East. He is in Iran. He and Capt. Lewell S. King, of Philippi, are serving in the same hospital unit.

* * *

Lt. Comdr. J. R. Brown, of Huntington, is attached to the Hospital Unit on one of our warships operating in the Pacific area.

* * *

Lt. Comdr. E. L. Gage, of Bluefield, who has been stationed at Norfolk for the past several months, is now serving "somewhere" overseas.

* * *

Maj. J. C. Ford, of Huntington, who is attached to the 150th Infantry, is serving with the American forces overseas.

MEDICAL CARE FOR WIVES AND INFANTS OF ENLISTED MEN

During the past few days a mimeographed letter has been sent to the doctors of West Virginia together with a plan adopted by the State Health Department for the care of the wives and infants of men enlisted from West Virginia in the military service. The letter was mailed over the signature of Dr. C. F. McClintic, State Health Commissioner, and the program will be under the direction of Dr. Lenore Patrick, Director of the Division of Maternal and Child Hygiene, State Department of Health.

The plan as presented by Drs. McClintic and Patrick, and as approved by the Council at the meeting held in Charleston, May 16, is as follows:

State of West Virginia
State Department of Health
Charleston, West Virginia

The Maternity and Infant Care Program in West Virginia for Wives and Infants of Men in the Armed Forces.

(Information for physicians and hospitals participating in this program)

I. *Introduction.*

This service was made possible by Congress in a bill signed by the President of the United States on March 18, 1943, when an appropriation was made for the period ending June 30, 1943, for grants to States, including Alaska, Hawaii, Puerto Rico and the District of Columbia under allotments by the Secretary of Labor and plans developed and administered by the State Department of Health and approved by the Chief of the Children's Bureau.

II. *The Plan for Administering the Program.*

1. *Eligibility for Care Under the Plan*: Any pregnant women in W. Va., irrespective of legal residence, financial status, race or color, whose husband is in the armed forces of the United States of the fourth, fifth, sixth or seventh grades of the Army, Navy, Marine Corps, or Coast Guard, and who makes application for such care, will be eligible for the medical, and the hospital maternity services which are requested by the attending physician, without cost to the family when similar services are not available through medical or hospital facilities of the Army or Navy. Similarly, any infant under 1 year of age whose father is among those listed in the grades above is eligible for medical, surgical, and hospital care.

2. *Methods of Application for Care*: The forms M and M-1 should be completed and signed by the woman and by her physician, and then forwarded immediately by the physician to the Director of Division of Maternal and Child Hygiene, State Department of Health, Charleston, West Virginia. The form provides a place for entering the husband's service number. The serial number entered on the form should be verified by the attending physician from the applicant's allowance card or a letter from her husband.

3. *Methods and Policies of Authorization for Payment of Services*: The State Director of Maternal and Child Hygiene will promptly notify in writing the patient, the attending physician, the local health department, and the hospital (if hospital care is recommended by the attending physician) as to whether or not the care applied for is authorized.

Authorization for maternity care will cover the services rendered at the visit when the request for authorization was signed by the physician, but will not cover any previous care rendered.

Authorization for care of sick infants will be made retroactive to cover the care rendered during the first week of illness while authorization was pending, but will not cover any previous care rendered the infant. The initial authorization for medical care of sick infants will be limited to medical services, the cost of which does not exceed $20. Before additional authorization is granted, the case must be reviewed by the State Director of Maternal and Child Hygiene.

Authorization for emergency consultation may be made retroactive.

Application for authorization for hospital care in case of emergency must be submitted by the hospital or attending physician within 24 hours of admission to a hospital, or these applications when authorized may be retroactive to cover the emergency period while authorization was pending.

Due to the large demand for medical care under this program and the limited funds available, physicians participating in this program are urged to take care of the normal obstetrical cases at home, and to take only abnormal cases to the hospital.

Initial authorization for hospital maternity care will be for a maximum of 14 days, and a minimum stay of 10 days postpartum should be arranged if at all feasible, in any acceptable hospital in the community.

Initial authorization for pediatric hospital care should not be for more than 14 days. Renewal of authorization for maternity or pediatric hospital care should be made only after review of the case by the Maternal and Child Hygiene director.

Authorization for medical and hospital care will be made by the State Department of Health under agreement with the attending physician or the hospital that no payment will be accepted from the patient or family.

4. *Referral for Medical Services*: Infants included under this program will be referred wherever possible to child health conferences (sponsored by the local or county health department) for medical supervision and immunizations. Those with crippling conditions will be referred to the State Crippled Children's agency for care.

5. *Referral for Nursing Services*: All patients applying for medical care under this plan will be referred to the local health department where one exists. The public health nurse will visit the patient's home and stress good health habits during pregnancy and assist the mother in planning for the arrival of the baby.

Wherever critically ill patients require special graduate nurses for bedside nursing care in the home or hospital, the attending physician should apply to the Director of Maternal and Child Hygiene for this service. Nurses employed under this program must be graduates of a school of nursing whose hospital had a daily average of 50 bed patients, and she must be registered with the West Virginia State Board of Examiners for Nurses. The use of this service will be provided only for the critical period of the patient's illness.

In Wetzel County where the home delivery nursing demonstration is set up in the county health department and under the supervision of the State Department of Health, maternity patients under this program will be referred for home delivery service when possible.

6. *Referral for Social Services*: When patients for whom care is authorized under this plan are in need of social services relating to individual problems which interfere with medical care, such as unsatisfactory living conditions, separation from husband and family, inadequate income and lack of proper food, these will be referred to the State Department of Public Assistance who agree to provide such services or assistance insofar as possible

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8. *Payments for Medical Care*:

a. Maternity Care: Payments to private physicians participating in the program will be made on a case basis rather than a fee-for-visit basis.

Payments will be made only for the services rendered after official authorization except for visits when authorization is pending or for emergency medical care.

For complete medical services during the prenatal period, labor and the puerperium, and inclusive rate of $35.00 has been established. If prenatal care was provided in a prenatal clinic or elsewhere, or was not provided by the physician doing the delivery, a fee of $25 will be paid for medical care during labor, and for postpartum care and examination approximately 6 weeks after delivery.

Proportionate amounts of prescribed prenatal care will be paid at the rate of $2.00 each visit and the fee for complete service will be adjusted accordingly.

Fee schedules for nonobstetric surgery and specialized consultant services will be developed.

b. Health Supervision and Medical Care for Infants: 1. Infants included under this program should be referred to child health conferences (sponsored by local health departments) for medical supervision and immunizations wherever arrangements can be made.

2. Medical care for sick infants: The amount of payment to a physician for the care of a sick infant will be calculated from the following maximum scale of payment in relation to the place, and date of visits reported by the physician:

A. First visit during first year of infant's life. If at home—maximum $3.00 for first visit. If in office or hospital—maximum $2.00. (A physician is paid at this rate only for the first visit during an infant's first year of life).

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TUBERCULOSIS ABSTRACTS

(Continued from page 209)

The mass survey, as a method of case finding, has been developed according to well conceived ideas based on demonstrated mortality and morbidity figures. Tuberculosis is more prevalent in tenement house areas and among the poor and unemployed than among those of better social or economic surroundings. In New York City the major problem in tuberculosis exists among the colored population. The mass survey of the colored of all ages is indicated.

Information gained from mass surveys in New York City has made it possible to indicate clearly where to expect most tuberculosis by age, sex, color and economic groupings. Highest yield came from a group of homeless and non-settled males, with 54 cases per 1,000, while the lowest was only one significant case per 1,000 among the pupils of a high school.

Cooperating with the Army since the very beginning of the draft in 1940, the Department of Health first carried the entire responsibility for personnel and x-ray examinations, soon shifted to the exclusive function of following up all resident men rejected at the area induction centers because of suspected pulmonary tuberculosis. This has given opportunity for seeing that proper supervision is provided in each case, and has been marked by close cooperation with and by the local draft boards. If a man fails to report after the induction board examination, a letter to the chairman of the board results in the issuance of an order to the delinquent to appear.

Today, national existence depends on national defense and this, in turn, on national fitness. One of the most serious problems confronting public health administrators is tuberculosis, a most communicable malady and one that invariably increases during periods of war. The safest defense, so far as tuberculosis is concerned, is to find the cases now and get them under supervision so that there will be less opportunity for advanced disease to develop

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and, thereby, less chance for the further spread of infection to others.

There are thousands of men and women now returning to jobs in industry after months or years of inactivity because of tuberculosis or because of other reasons such as unemployment. Sudden return to regular work may cause a relapse or stimulate latent lesions to flare up. Increased income, with increased recreational activities and irregular hours supplementing heavier occupational demands, may upset the balance in favor of tuberculosis. Therefore, it is of the utmost importance that case-finding programs be expanded at this time.

Summary

Case finding is the basis of tuberculosis control in the program of the New York City Department of Health. Three major efforts in case finding have been presented. Through these sources 799,659 persons were axamined between 1933-40 with the result that 37,339, or 5 per cent, were found to have significant lesions.

In order to speed up the program, many of the previously standardized procedures were greatly simplified, permitting greater emphasis on the important contacts and cases rather than to scatter efforts equally among all patients admitted, a large majority of whom are in no practical need of intensive supervision. The mass survey principle has been applied to the district clinic.

It is the policy of the department to intensify its case-finding program regardless of the availability of beds for all cases discovered.

There is an indicated need for more mass education of the public about the facts of tuberculosis. The undergraduate medical student and nurse need more education in this field, and the practicing physician, if thoroughly interested, could contribute more in the control program than is the experience at this time.

Case Finding in New York City, Herbert R. Edwards, M. D., American Review of Tuberculosis, March, 1943.

Tropical Diseases

We predict that one of the most brilliant chapters on medical service in the present war will be that relating to tropical diseases. What with the various vaccines and the sulfa drugs, plus the investigative mind of American medicine, these tropical diseases are being met and conquered.—*Journal of the Indiana State Medical Association.*

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ENTERED AS SECOND-CLASS MATTER, JANUARY 1, 1926, AT THE POST OFFICE AT CHARLESTON, WEST VIRGINIA

Vol. XXXIX July, 1943 No. 7

OPTIC ATROPHY*

By F. V. GAMMAGE, M. D.
Bluefield, West Virginia

LIKE a magnificent mosaic painstakingly fabricated by a thousand expert hands and emblazoned on the walls of an ancient temple, so is the art and science of medicine. From the time of Hippocrates, philosophers, scientists and physicians have added their bit to the vast sum of medical knowledge which is the heritage of today. It is no wonder then that the picture which meets the eye of the awe-struck observer is not one of geometric precision; rather is it the variegated accumulation of irregular and multitudinous pieces, more impressive artistically than scientifically.

The study of the atrophy of the optic nerve well illustrates this analogy when one contemplates the apparently incongruous collection of pieces woven through the years into the fabric of the present day knowledge of this single subject. Choked disk, papillitis, neuroretinitis, stauungspapille, ascending neuritis, descending neuritis, primary atrophy, secondary atrophy, consecutive atrophy, syphilitic atrophy, glaucomatous atrophy, all contribute to the endless nomenclature and numerous medical concepts from which are derived the present understanding of this subject. The result is that every authority has his particular basis for classification, whether it be empiric, anatomic, pathologic or ophthalmologic. The inadequacy of medical statistics, local, national and world wide, prevents correlation. One, therefore, draws his conclusions in accordance with his viewpoint. To the general practitioner, optic atrophy is an avis rara, but the oculist considers it an ordinary disease. In a psychiatric hospital, where patients showing the effects of syphilis, multiple sclerosis, cerebral or cerebellar disease, trauma and poison are concentrated, one may become biased and conclude that it is rather the rule than the exception.

THE AUTHOR

Dr. Gammage, graduate Ohio State University Medical School; interned Good Samaritan Hospital, Cincinnati; Postgraduate Chicago E. E. N. T. Hospital, Western Reserve University; Bluefield Sanatorium Staff; Diplomate American Board of Otolaryngology.

*Read before the regular monthly staff meeting of the Bluefield Sanitarium, Bluefield, West Virginia, February 17, 1943.

With this utter confusion as a starting point, one is at liberty to examine the subject, derive from it all the erudition he can, and proceed to formulate a basis upon which to build a clear personal idea of this most profound subject which pertains vitally to sight, the most important of all the senses. Among the many perquisites of the Germanic people that put to shame the present race of degenerates, is the name of von Helmholtz, through whose genius the world now has the ophthalmoscope, which he invented in 1851. This diagnostic boon enables the oculist to view the interior of the eye and thereby pry into the precincts of the living flesh. It is here alone that he may observe with amazing ease the condition of a living artery, vein, or nerve fiber, thus many times obtaining the key to the condition of the cerebral, cerebellar, cardiovascular, renal or nervous system, not to mention the hepatic, pancreatic and other systems of the body. Nevertheless, since medicine is first an art and only now beginning to emerge into the realm of the exact sciences, one cannot expect an open sesame to the diagnosis of disease by means of an examination of the ocular fundus any more than from physical, chemical, laboratory, roentgen or other diagnostic procedures. In conjunction with these, however, it is an invaluable help.

"OPTEEK AETROFEE"

The story is told that when the elder Fuchs visited this country, the staff of the ophthalmologic clinic of the Cook County Hospital jokingly presented to him a Negro for an examination of the fundus. Obligingly the great oculist examined the patient with his ophthalmoscope and immediately upon viewing the white nerve head gave out the profound verdict of "opteek aetrofee", to the great merriment of all, for the nerve head of the Negro is normally white. Because a disk is white, therefore, does not necessarily signify optic atrophy, nor is it possible positively to diagnose the type of optic atrophy by ophthalmoscopic examination alone.[1] On the other hand, the typical picture of papilloedema, a precursor of optic atrophy which suggests brain tumor as it causes increased intracranial pressure, is observed in lymphatic leukemia, nephritic retinitis, retinal venous thrombosis and leukemic retinitis.[2] Only a short time ago a Negro youth walked into the office and requested refraction. Examination of the eyegrounds revealed bilateral choked disk with an elevation of 4 diopters in either eye. He was referred to an internist who reported that the blood pressure was 230 systolic and 165 diastolic. He died four days later.

SPECIAL FORMS OF RETINITIS

It is inaccurate to describe special forms of retinitis as characteristic of a particular disease. The familiar ophthalmologic picture of Bright's disease, unfortunately usually seen first in the final stage of retinitic optic atrophy, has been known to occur without albuminuria in exanthemas, measles, erysipelas, malaria, anchylostomiasis, syphilis, diabetes, scurvy, pernicious anemia, carcinomatosis, brain tumor, uncomplicated arteriosclerosis and poisoning by lead and Felix mas.[3] It is obvious then that this subject cannot be approached from an a priori standpoint, but must be studied most minutely. The various pieces of the mosaic can be pieced together into the data that, taken all together along with other aids and observations, will help to solve the enigma of the much sought for medical diagnosis.

The term optic atrophy is usually meant to refer to certain changes seen with the ophthalmoscope in the optic disk, although in order to bring about these changes many other far-reaching ones must necessarily have taken place anywhere from the rods and cones of the retina to the nuclei of the primary optic ganglia at the base of the brain. A nerve fiber is composed of a cell body with axone and dendrite, which are dependent on the cell body for life. As long as the cell body lives, its processes, if intact, will also live. From the rods and cones to the visual cortex there are primarily four separate nervous connections: (1) the rods and cones, which

synapse at the outer molecular or plexiform layer of the retina with the (2) intermediary neurones, which synapse at the inner plexiform retinal layer with the (3) optic nerve proper, whose cell bodies constitute the ganglion cell layer of the retina and whose axones are the nerve fibers which constitute the nerve bundle running through the scleral foramen. They, together with the central artery, its branches and veins, are what one sees when he observes the disk in the fundus oculi. They run all the way back through the orbit, optic foramen and optic chiasm, around the crura cerebri to the (4) primary optic ganglia, the lateral geniculate body, the anterior or superior corpus quadrigeminum and the pulvinar of the optic thalamus. Here they synapse with the final neurone which relays the visual impressions through the posterior portion of the internal capsule to form the optic radiations or fibers of Gratiolet. They end in the cortical ganglion cells of the mesial surface of the cuneus and the parts surrounding the calcarine fissure of the occipital lobe of the brain.[4] There is thus a wide area over which insult or injury may affect the nerves that serve one's vision.

SIMPLE CLASSIFICATION

Since simplicity is the soul of knowledge, if, out of the welter of nomenclature there evolves a simple classification, it will facilitate understanding of the syndrome. Atrophy, medically speaking, is the end point of pathologic processes within the body, whether from traumatic, toxic or disease causes. Galen's four requisites for the process of inflammation, which is the root of all human pathologic change, are well known: rubor, calor, tumor, dolor. All are associated with optic atrophy. In this disease resulting from trauma there occurs primarily a considerable degree of redness, heat, swelling and pain in the surrounding tissues as well as in the optic nerve proper. They are present ipso facto in optic atrophy caused by disease. As for toxic causes, a familiar example is alcoholic neuritis with the characteristic wrist drop, ankle drop and polyneuritis, which simulates beriberi. This is a true neuritis which fulfills Galen's requirements, and the optic neuritis which precedes optic atrophy is not one whit different from this general picture of true inflammation of the optic nerve. Neuritis is caused by the action of an irritant on a nerve. The irritant may be bacterial or toxic. Direct infection of a nerve produces a true inflammation, but the action of a toxin leads to a degenerative rather than an inflammatory condition, although it is called neuritis.[5]

COMPLETE SEVERANCE OF THE OPTIC NERVE

Simple primary or noninflammatory optic atrophy, in which no inflammation is seen upon microscopic examination, is present in its purest form in the condition of complete severance of the optic nerve, as in a stab or bullet wound of the orbit, where degeneration of the nerve takes place. Even in a case of this type inflammatory exudates are likely to occur prior to the simple degenerative process in which the nerve fibers lose their white medullary substance and are transformed into extremely minute fibrillæ. It follows then that this clear break in the line of conduction of the optic nerve suggests the conclusion that the expression "simple" or "primary" atrophy is a misnomer.[6]

Indeed, all these considerations lead obviously to the conclusion that a single classification of optic atrophy may be made, that of secondary optic atrophy, or optic atrophy resulting from inflammation of the optic nerve, whether traumatic, toxic, or pathologic in origin. Around this simple conception, however, must be developed the whole unending category of the causes, kinds and manifestations of optic atrophy. Incident to the present world war, there will be many and varied injuries of the skull with associated trauma of the optic apparatus varying all the way from the simple knocking out of the eye to the blowing away of the occipital lobes, in which are located the visuosensory and visuopsychic cortical areas. Wurdemann[7] noted that in cases of injury to the visual cortex and cuneus, blindness results and that entire loss of vision may occur from such

injury, or from disease, located centrally without atrophy of the optic nerve being apparent at the optic disk. It is not discernible, he observed, because the intervening neurones are connected with other healthy nerve cells of the visual complex, forming a block of healthy neurones between the obliterated central nerve cells and the receiving organ of sight. He added that the same may be said of the visual structures at the base of the brain in the middle fossa of the cranium.

INJURY OF THE HEAD

In this connection a note of caution is interposed to curb undue optimism as to the vision in cases of injury of the head. I have seen many cases in which optic atrophy with varying degrees of blindness developed many years after an injury upon almost any part of the skull. Phylogenetically the human eye in all its intricate complexity has one of the most fragile nerves in the whole body. One cannot, therefore, with impunity, insult the optic nerve. An injury to the skull which is not severe enough to cause an external injury or produce other signs of cranial injury, may yet cause minute hemorrhages in the optic nerve or set up enough traumatic irritation to cause the formation of connective tissue. Sooner or later, perhaps years later, this tissue gradually proliferates, contracts and ultimately strangles the optic nerve sufficiently to cause optic atrophy and blindness. We cannot rule out optic atrophy simply because a patient has a vision of 20/20. That may be merely central vision, resulting in tubular vision, or the general state of atrophy may not yet have progressed to the degree necessary to cut down the vision.

Atrophy may affect any nerve in the human body, as well as any nerve in the optic pathways; but for the purposes of this study optic atrophy basically affects a single neurone in that most complicated system. This neurone starts at the internal molecular retinal layer and ends at the primary optic ganglia, 90 per cent of which enters the lateral geniculate nucleus. It passes through the lamina cribrosa of the optic disk and constitutes the optic nerve. The changes that take place in the optic disk are clinically termed optic atrophy. They may occur from divers causes and may affect this neurone in any place along the way from its dendrite beginnings in the internal plexiform retinal layer to the synapse in the lateral geniculate nucleus. Chief among the many causes is syphilis, whose ravages comprehend the entire realm of pathology. Wagener[8] stated that the syphilitic involvement of the optic nerve occurs in three distinct ways causing: (1) optic neuritis, (2) axial or retrobulbar neuritis, and (3) simple progressive primary atrophy. Seventy-seven and one-half per cent of the lesions of the nerve are of the third type. This single cause may, therefore, be used to illustrate my conception of the whole subject of optic atrophy.

CHANGES DUE TO SYPHILIS

The changes in the retina that occur as a result of syphilis and are observed on ophthalmologic examination of the fundus, are familiar; they include retinitis and retinochoroiditis in its varied forms. Inflammation of the retina naturally involves beginnings of the optic nerve, which are present in the internal molecular layer, the ganglion cell layer and the layer of nerve fibers. All these become inflamed, first in one part of the retina, then in another, the condition sometimes ending in atrophy. As the process advances, more and more of the retina is destroyed, and more and more fibers of the optic nerve become atrophied. At length the pathologic change begins to show in the optic disk, and the telltale whiteness begins to appear. A veritable panorama of color of the optic disk is spread out before the examiner's eyes in the various stages, forms, and kinds of optic atrophy, according to the authors of the various textbooks on ophthalmology. In postneuritic atrophy, also called secondary or consecutive atrophy, the color, they noted, may be a dirty grayish, red, yellowish or waxy. In some subjects one cannot even be sure whether or not the pallor of an optic

disk is pathologic and therefore indicative of optic atrophy. There are, rather, a normal Negro disk, or, possibly, a blond disk, also an exaggerated physiologic pit and many congenital and pathologic conditions, such as coloboma of the disk and glaucoma, to be considered. In consequence, the fine color distinctions that one is supposed to see in optic atrophy are rather baffling, to say the least.

My corrected vision in both eyes is 20/10 or 6/4 with Jaeger 1 at 33 cm. with normal vision for color, but if I can make a diagnosis of optic atrophy after visual and fundal examination and examination of the fields of a patient, I am content without trying to run the scale of the spectrum in an effort to diagnose the exact degree of pallor that is present in any one disk. Obviously, all cases of optic atrophy are not complete, and one must expect to see variations from the lack of all color, or flat white, in the optic disk.

ASCENDING OPTIC ATROPHY

Along the course of the optic nerve beyond the optic disk behind the lamina cribrosa of the scleral foramen one meets with the condition of ascending optic atrophy. After the cell body of a neurone dies, its processes, the dendrites and axone, both die. The cells in the ganglionic layer of the retina are the source of life for the optic nerve, whose axones run throughout the orbit to the optic foramen and into the cranium to the optic chiasm. Ascending optic atrophy follows along the entire course, destroying the axone of the optic nerve all the way to the primary optic ganglion. This process takes place in accordance with the general law that nerve trunks atrophy when their terminal expansions are destroyed. The optic nerve may be subjected to many other conditions behind the optic disk as a result of syphilis.

A true syphilitic optic neuritis may assail the optic nerve in the orbit. Optic neuritis is at first a perineuritis in which there is an interstitial neuritis of the sheaths and septums of the optic nerve. This inflammation compresses the nerve fibers, which slowly atrophy and die. This is a true neuritis, and its resultant atrophy is usually classified as secondary optic atrophy with the disk showing flat white, grayish, greenish, or bluish. The arteries are filamentous, but the veins are normal.

Toxic neuritis, toxic amblyopia and neuritis of the papillomacular bundle of the optic nerve, acute or chronic, constitute another medley of terms, all having the same meaning fundamentally but conveying different ideas. They simply refer to inflammation, primarily, of the optic papillomacular bundle of nerve fibers. This condition sometimes clears up with restoration of perfect vision but more often progresses to complete involvement of the whole optic nerve, finally resulting in optic atrophy with blindness, as do the other forms of optic neuritis. This form is called retrobulbar, not because the papillomacular nerve fibers are not affected intraocularly, but because examination of the fundus yields no evidence at first leading to detection of this disease. Instead, the diagnosis must be made from studies of the visual fields. A cecocentral scotoma is present, first for green and red, then for white, with the formation eventually of an absolute scotoma and blindness. My experience with this form of optic neuritis has been extensive and rather startling as I have encountered it in the treatment of psychiatric patients. Overwhelmingly, in the cases that have come under my observation, syphilis has been the main cause, especially among Negro patients, for the percentage of cases of syphilis among Negroes far exceeds that for white persons.

CHANGES OVERNIGHT

A patient retiring at night with normal vision may wake up the next morning in a fog; he can see very little. Examination of the fundus gives no evidence of disease and leads one to infer that the inflammation must be beyond the horizon of one's vision, or retrobulbar. Later, (it may be after weeks, months, or years have elapsed) the pallor of the optic disk begins to be apparent, first in the temporal quadrant, with dying of the fibers of the papillomacular bundle and dis-

appearance of the numerous arterial and venous capillaries that give the red glow to that portion of the nerve head; also, there is complete exposure of the foramens for the passage of the nerve fibers in the lamina cribrosa of the sclera. This process continues until the whole disk whitens and complete optic atrophy and blindness takes place.

TOXIC NEURITIS

These mental patients with toxic neuritis usually had syphilis, but some had diabetes, malaria, rheumatism, tuberculosis, or other disease; others had, perhaps, drunk wood alcohol. In a few unfortunate cases I have seen absolute blindness follow the taking of a single dose of tryparsamide, and in these instances it was naturally impossible to determine the exact pathologic changes. Otherwise, the process was identical with the general picture of true inflammatory optic neuritis with its resultant optic atrophy. The underlying pathologic process is the same, whether the cause is syphilis, malaria, alcohol, tobacco, or other agent. In cases of optic neuritis associated with tryparsamide therapy, it is impossible to determine definitely whether or not this valuable drug causes the optic neuritis and atrophy. So much blindness developed all the time in the syphilitic patients that it was next to impossible to tell which caused the blindness—the syphilis or the drug. On the whole, however, considering the drug, the disease, and the patients afflicted with optic atrophy who had other diseases, such as arteriosclerosis, nephritis, malaria and paranasal sinusitis, it is my opinion that it was the disease that caused the optic atrophy rather than the drug.

In addition to a true neuritis of the optic nerve along its course across the orbit due to syphilis, there may be an increase in pressure of the cerebrospinal fluid in the intervaginal spaces of the meningeal coverings of the optic nerve. This may cause papilloedema of the head of the optic nerve. Examination of the fundus reveals a swollen, elevated, reddened, blurred optic disk with its myriad capillaries resembling a Medusa's head, which immediately suggests brain tumor. This condition is opposed to true papillitis which accompanies true optic neuritis. While it resembles papilloedema in a measure, it differs from it in degree; also, in papilloedema there may be an elevation of from 1 to 6 diopters or more, but in papillitis the optic disk is flattened. In contradistinction to papillitis, papilloedema is considered an edema of the optic disk. If, however, one ties a string around his finger just tight enough to obstruct the venous flow, as illustrative of the obstruction that occurs in papilloedema, he soon observes Galen's four laws relating to inflammation at work, namely: rubor, calor, dolor and tumor. Furthermore, if he leaves the string there too long, secondary changes take place, ending in wet gangrene, necrosis and atrophy associated with a considerable degree of infection. This process is exactly what happens in papilloedema and it bears out the observation that all optic atrophy is postneuritic, true or secondary.

FOSTER KENNEDY SYNDROME

The Foster Kennedy syndrome offers a double example of affections of the optic nerve resulting finally in optic atrophy. If a basal syphilitic arachnoiditis or gumma hugs closely the intracranial end of one optic canal, it may well strangle the traversing optic nerve, permitting no increase in cerebrospinal fluid in the intervaginal space of the meningeal coverings of the orbital portion of this nerve. The resulting pressure cuts the optic nerve as effectively as if it were severed by the thrust of a stiletto, and produces blindness. The optic atrophy observed on fundal examination in this type of case is called descending optic atrophy. It creeps peripherally slowly downward from the cranial cavity to the end organ of the optic nerve, the eye itself. This process is slow and may take years. It is the so-called primary type of optic atrophy in which no inflammatory process is said to be observed in the optic nerve, the nerve simply dying slowly and showing optic atrophy at the optic disk in due time. In this case a kaleidoscopic array of

colors is supposed to flash before the eyes of the examiner on viewing the optic disk when eventually the primary optic atrophy arrives. Green, blue, gray and white appear, and at last a sharp uniform pure white remains. The capillaries have disappeared, but the arteries and veins are normal. While this process produces the descending primary atrophy of the optic nerve involved in the Foster Kennedy syndrome, a secondary effect may be noticed provided the syphilitic arachnoiditis or gumma is extensive enough to crowd the great basal subarachnoid cisterns that hold the cerebrospinal fluid cushioning the great expanse of the cerebrum. This crowding causes increased intracranial pressure, which in turn is projected to the optic papilla of the opposite side, causing papilloedema of the eye on that side. Thus the double action phenomena of the Foster Kennedy syndrome are produced by the same lesion, and this lesion arises from the same cause—syphilis.

SPECIAL DISEASES

In addition to the foregoing considerations, certain special diseases are usually listed as effecting a particular kind of optic atrophy, namely, retrobulbar optic neuritis, toxic amblyopia, Leber's disease, tabes, paresis, multiple sclerosis and glaucoma. In primary glaucoma of the simple or noncongestive type, the increased tension causes a venous stasis throughout the eye due to the compression of the venae vorticosae, which are particularly susceptible because of their oblique course through the sclera. Thus the anterior ciliary veins become the sole remaining course of exit of the venous blood from the eyeball. This condition is comparable with the picture of papilloedema caused by compression or obstruction of the retinal veins from the eye. It is really one of inflammatory edema, which is present in great degree in the congestive or inflammatory type of primary glaucoma, in which the eye is violently inflamed, sufficiently in some cases to throw out enough granulation tissue to form posterior synechiæ in the iris. Fundal examination shows that the optic disk partakes in this general inflammatory reaction and has a red and clouded appearance. With increasing pressure the disk becomes excavated, the retina and optic nerve are compressed, and atrophy results.

In tabes, at the outset, discrete foci of the same gray degenerative tissue that characterizes the columns of Burdack and of Goll in the spinal cord, attack the optic nerve. These are distinct separate foci that are comparable with the insular foci observed in insular or multiple sclerosis, with the exception that instead of the gray degenerative tissue of the trunk of the optic nerve characterizing tabes, in multiple sclerosis there occur inflammation and proliferation of the connective tissue which strangle the optic nerve. In both cases the outcome is the same. Somewhere along the course of the optic nerve this process strikes with the result that sooner or later the continuity of the optic nerve is severed as completely as though with a knife. In consequence, a strangulation of the optic nerve, or a descending optic atrophy occurs, which in its basic primary pathologic process is, in reality, simply an inflammation of the optic nerve resulting finally in its destruction and atrophy.

CONCLUSION

Optic atrophy, its causes, effects and widespread manifestations present a labyrinthine conundrum which is not easily understood. This intriguing subject has been studied by many investigators. Each has contributed his bit and made certain changes in diagnosis, treatment and conclusions, until now the heterogeneous assortment of knowledge and data that confront one is truly baffling. I have added my bit out of wide observation of the disease, especially in psychotic patients, in the hope of simplifying consideration of the subject rather than adding to the general pandemonium.

Syphilis, whose havoc bids fair to comprehend all pathology, is the cause used as an avenue of approach to outline the various manifestations of the disease and the mechanics of its attack. The multiplicity of classi-

fications I have boiled down to a single consideration, namely, that all optic atrophy is simply the end result of inflammation of the optic nerve in all its many ramifications, whether the cause is trauma, tumor, inflammation, or edema secondary to increased intracranial pressure.

The wide variety of manifestations is by no means comparable with the diversity of causes, which include the whole realm of human ailments. Phylogenetically, the human eye and optic apparatus are unique in embryologic development, being the omega of visual apparatus among all living things. Their intricacy of construction and refinement of application transmit a tenderness to the optic nerve because of which it behooves one to exert the utmost caution in the care of the eyes. This nerve responds as easily to insult as to the discrimination of the finest anatomic and pathologic designs visible through the lens of one of the latest ultramicroscopes. To enumerate the causes of optic atrophy would, therefore, be to attain the impossible, for they are legion.

The present international madness that is again deluging this devoted orb with human blood, is bringing trauma of every conceivable description to the human head. It is not only now producing blindness galore from optic atrophy, but is also preparing the way for blindness to develop in many instances with the years as a direct result of trauma not only to the eye and orbit but also to any part of the head from the nasion to the inion. It is not necessary to injure the optic nerve directly to produce optic atrophy and blindness. Tumors, cysts (including cysticerci), granulomas and cicatricial tissue may cause so-called primary optic atrophy; by means of vice-like pressure on the optic nerve they effect cleavage as sheer as that produced with a knife.

Consideration of disease in relation to optic atrophy warrants the conclusion that any disease of the human body may cause optic atrophy. Inflammation anywhere may metastasize into the tissues of the eye and optic nerve and, by causing an optic neuritis, finally blank out the disk in the familiar picture of optic atrophy with its resulting blindness. For example, the rhinologist treats paranasal accessory sinusitis continually. This disease in 99 per cent of the cases has its origin in the ordinary cold, for every cold is in reality an acute catarrhal pansinusitis. The sinuses surround the orbit; in fact the ethmoid and sphenoid sinuses are parallel and in part contiguous with the optic nerve throughout its entire course. It is no wonder then that a common cold can readily produce the well known syndrome of retrobulbar optic neuritis. While producing partial amaurosis on involvement of the papillomacular bundle of the optic nerve, this disease may not end there, but proceed to complete optic neuritis. This further involvement is first detected in the telltale pallor of the temporal quadrant of the optic disk, which is so easily passed over as an exaggerated physiologic optic pit. The paleness continues to spread until there results a total whitening of the head of the optic nerve, which in its finality spells blindness from the common cold. Whatever the cause, whatever the manifestation, optic atrophy in all its aspects is but one motif of the pattern of that intricately designed mosaic which is medicine.

REFERENCES

1. Rutherford, C. W.: *The Eye*. D. Appleton & Co., New York. 1928. p. 209.

2. Leinfelder, P. J., and Paul, W. D.: *Papilloedema in General Diseases*. Arch. Ophth. 28:986 (Dec.) 1942.

3. Oatman, E. L.: *Diagnostics of the Fundus Oculi*. The Southworth Co., Troy, N. Y., 1926, Vol. 1, p. 80.

4. May, C. H.: *Manual of Diseases of the Eye;* Ed. 14, Wm. Wood & Co., Baltimore, p. 322.

5. Boyd, W.: *Textbook of Pathology;* Ed. 2. Lea & Febiger, Philadelphia, 1934, p. 933.

6. Fuchs, E.: *Textbook of Ophthalmology*. (Duane) Ed. 8. J. B. Lippincott Co., Philadelphia, 1926. p. 771.

7. Wurdmann, H. V.: *Injuries to the Eye;* Ed. 2. The C. V. Mosby Co., St. Louis, 1932. p. 640.

8. Wagener, cited by Levy, I.: *Neurosyphilis in Relation to Ophthalmology*. J. M. Soc., New Jersey, 581-3 (Nov.) 1942.

In the past twenty years, sales of vitamin preparations have increased from $500,000 to $150,000,000 a year.—*The Pathfinder*.

PHARYNGO-ESOPHAGEAL DIVERTICULUM TREATMENT BY ONE STAGE DISPOSITION OF THE SAC

By R. H. EDWARDS, M. D., F. A. C. S.
Welch, West Virginia

SINCE Ludlow of England described a diverticulum of the pharyngo-esophageal type in 1767 there have been numerous articles by many eminent surgeons dealing with the etiology, pathology and treatment of esophageal diverticula. In 1840 Rokitansky classified diverticula of the esophagus into two general groups—pulsion and traction. The former is the result of pressure from within and the latter is the result of traction from without. It is the general consensus that the pulsion type of diverticula usually occurs in the region of the pharynx, rising between the oblique fibers of the cricopharyngeus muscle of the posterior wall. The traction type of diverticula is usually located in a thoracic position of the esophagus and is usually a result of an inflammatory condition with traction from without.

The earliest symptom is usually dysphagia. There is a sensation as of a foreign body obstructing the normal processes of swallowing, and food seems to stick in the throat. Later there is regurgitation of food and mucus. These symptoms do not occur until a definite sacculation has formed; the diagnosis is then made by liquid barium and x-ray.

In all advanced cases surgical treatment is indicated. The present day trend of surgical management consists of removal of the sac in one or two stages. Babcock and those associated with Jackson have advocated the one stage resection, the sac being identified and its dissection facilitated by the esophagoscope. In the two stage operation advocated by C. H. Mayo and F. H. Lahey and subscribed to by numerous others, the sac is liberated and anchored in an upward direction in the neck but not removed, the procedure offering two advantages: (1) the elimination of infection, and (2) the improvement of the patient's nutrition. About ten days later a second operation is performed with removal of the sac.

THE AUTHOR

Dr. Edwards, graduate Medical College of Virginia, 1923; interned Medical College of Virginia, Hospital Division; Postgraduate, 1924-26, same institution; Chief Surgeon, Stevens Clinic Hospital, Welch; Consulting surgeon: Bluefield Sanitarium, Bluefield; Clinch Valley Clinic, Richlands, Va.; Fellow American College of Surgeons; Southeastern Surgical Congress; International College of Surgeons.

I am presenting a one stage operative procedure which possesses all of the merits of the two stage operation, lessening the possibility of infection and eliminating a second operation with its attendant longer hospital stay.

CASE REPORT

Mr. G. E. G., age 66, reported to the Stevens Clinic Hospital on June 25, 1940. This patient gave a history of difficulty in swallowing of approximately two years' duration. During the past year, and especially during the past three or four months, it had progressed considerably. The diet had been limited to liquids. Heavier food lodged in his throat forming a lump just above the sternal notch. The patient was able to force particles of food back into the mouth by pressure on the neck anteriorly. As he stated, the regurgitated food was recognized as having been eaten from several hours to several days previously. His past history was irrelevant. He had had a laparotomy approximately twenty years ago for a gallbladder condition and was later operated upon by me in 1933 at Stevens Clinic Hospital for intestinal obstruction. His general health had been good otherwise.

Physical examination revealed an elderly white male. Blood pressure was 130 systolic and 80

diastolic. The examination was otherwise essentially negative except for a palpable tumor just above the sternal notch. This tumor was definitely enlarged following the intake of food. The laboratory reported the following: hemoglobin, 92 per cent; leukocytes, 7,850; polymorphonuclears, 78; small mononuclears, 20; large mononuclears, 2. Urine was normal. Blood Kahn was negative. X-ray report on examination of the esophagus, made on June 25, 1940, read as follows: "Films made after

A Case of Pharyngo-Esophageal Diverticulum

swallowing liquid barium show in the region of the first dorsal vertebra, a rather large, round collection of barium in the esophagus, which has the appearance of a diverticulum. The esophagus below this area is apparently normal."

The patient refused operation and was not seen again until February 13, 1943. The diverticulum had progressed considerably in size. The patient was unable to swallow liquids, all food was regurgitated, and he had lost considerable weight. It was necessary to use glucose intravenously and other supportive measures before operation on February 20, 1943.

Operation.—Under local anesthesia, (½ of 1 per cent novocaine), an incision was made on the left side of the neck from the episternal notch to the upper border of the cricoid cartilage. This extended down to the anterior border of the sternocleidomastoid muscle which was then retracted laterally. The deep cervical fascia was incised. The omohyoid muscle was divided in its central segment and the upper segment was retracted upward and forward. The middle left thyroid vein was exposed, clamped, divided between clamps and ligated. The inferior thyroid artery was carefully dissected out, doubly clamped, divided and doubly ligated. The thyroid was delivered mesially and upward. The carotid artery, internal jugular vein and vagus nerve were retracted externally, exposing the diverticulum which was then carefully dissected free. The sac was then disposed of by the Kerr-Parker intestinal aseptic method by applying the first Ochsner clamp on the sac parallel and close to the esophagus; the second clamp was applied just distally. The diverticulum was then removed by an electric cautery between the two clamps. With a very small needle, using intestinal chromic catgut #00, a basting stitch was applied over the proximal clamp. On removing this clamp and tightening the basting stitch the edges of the diverticulum were inverted or invaginated as the clamp was removed. A second layer of Lembert sutures was applied, closing the defect in the esophagus by closing the muscular fibers over this area. The wound was then closed in its respective layers with interrupted sutures of chromic catgut, using a rubber tissue drain in the lower angle of the incision. The skin was closed with skin clips.

A Levine tube was inserted through the nose into the stomach for feeding purposes. However, due to the fact that the patient was unable to expectorate mucus from the nasopharynx, it was necessary to remove the tube within twenty-four hours. Five per cent glucose and saline were given parenterally daily. Fluids were given by mouth on the eighth postoperative day. The small rubber tissue drain was removed on the fourth postoperative day. The wound healed by primary intention and the clips were removed on the seventh postoperative day. No infection or drainage was seen in the wound at any time after the operation. The patient was discharged from the hospital on March 7, 1943, with no interference with food intake. When he returned to the hospital on April 6, 1943, there was still no interference with food intake. A check-up examination with liquid barium and x-ray revealed the absence of the diverticulum, and no residual barium was seen in the area from which the diverticulum had been removed.

CONCLUSION

A case of pulsion diverticulum of the esophagus treated by a one stage operation and Kerr-Parker aseptic disposition of the diverticulum, without complications and with recovery, has been presented. The above method possesses all of the merits of a two stage procedure in eliminating the possibility of infection and the necessity of a second operation and its attendant longer hospital stay.

BIBLIOGRAPHY

Ross, D. E.: *Invagination Operation for Esophageal Diverticula.* Am. J. of Surg., 1937, xxxvii, 498-502, September.

McClure, R. D.: *Pharyngeal or Pharyngo-Esophageal Diverticulum.* Am. J. of Surg., 1934, Vol. xxiv, 732-744, June.

Maxeiner, S. R.: *The Present Surgical Management of Esophageal Diverticula, with Presentation of a New (?) Method.* Minnesota Med., 1941, 24: 91-96, February.

Harrington, S. W.: *Pulsion Diverticula of the Hypopharynx.* Trans. West. Surg. Asso., 1937, pp. 261-280.

Lahey, F. H.: *The Management of Pulsion Esophageal Diverticulum.* J. A. M. A., 1937, Vol. 109: 1414-1418.

Howard, R. M.: *Diverticula of the Alimentary Tract.* South. M. J., 1939, 32: 921-925, September.

THE USE OF SERUM, PLASMA, AND BLOOD IN GYNECOLOGY AND OBSTETRICS*

By A. P. HUDGINS, M. D.
Charleston, West Virginia

BLOOD transfusions, formerly resorted to only in the most hopeless cases, are today used early and frequently. This great change first began to be noticed about 1900 and has since been progressive.

The use of serum, plasma, and blood as therapeutic agents is universally accepted. The problem which confronts the surgeon today is to determine in what conditions each is of greatest value and how this method of treatment can be carried out most effectively, promptly and easily when it is indicated. Also, it is important to know how reactions and possible ill effects can be prevented.

INDICATIONS

The indications for transfusions may conveniently be divided into four groups.

Group 1.—Blood loss without shock. This may be due to a single hemorrhage of a moderate degree or recurrent hemorrhages such as may occur from a uterine fibroid, bleeding peptic ulcer, or prolonged loss of blood, as, for example, from hemorrhoids.

Group 2.—Loss of blood, usually, though not invariably, in large volume with resulting shock, which may be due to childbirth, trauma, surgical operations or any other acute hemorrhage.

THE AUTHOR

Dr. Hudgins, graduate Medical College of Virginia; interned Sheltering Arms Hospital, Richmond; resident, New York Cancer Institute; Postgraduate work, Bellevue Hospital, N. Y. C., Post Graduate Hospital, N. Y. C.; Obstetrics, Chicago Lying In Hospital.

Group 3.—This group includes more chronic conditions which have been present over a long period of time, perhaps with slow hemorrhage, or a debilitating condition lasting over a period of years. The transfusions may be given to the debilitated patient either as a preoperative or postoperative measure or simply as a supportive measure, even if a surgical procedure is not being considered.

Group 4.—The use of blood in the treatment of acute infectious diseases. Transfusions have been found to be of value in treating infections. The use of whole blood is considered to be of greater value here, perhaps because of the antibody effect.

It is interesting to note that the changes which occur in the blood picture are less marked in the treatment of infections than in the treatment of hemorrhage. In the latter condition 500 cc. of blood would be expected to raise the hemoglobin about 10 per cent, giving a rise in the red cell count of about

*Presented before Kanawha Medical Society, Charleston, West Virginia, February 17, 1943.

700,000. These changes are not as marked or as rapidly noted when some gross infection is present.

There are many indications, especially in the field of gynecology and obstetrics, for the use of transfusions. The most important may be listed as follows:

1. Hemorrhage associated with:
   a. Atony of the uterus after delivery.
   b. Deep cervical lacerations.
   c. Inversion of the uterus.
   d. Rupture of the uterus.
   e. Placenta praevia.
   f. Ablatio placentae.
   g. Incomplete abortion.
   h. Ectopic pregnancy.
2. Chronic loss of blood:
   a. Malignant disease.
   b. Submucous fibroids.
   c. Anemias of pregnancy.
   d. Hypermenorrhea.
3. Newborn:
   a. Hemorrhage from the cord.
   b. Anemia of the newborn.
   c. Sepsis.
   d. Hemorrhagic diseases.
   e. Feeding difficulties.

In the newborn the cord is the most frequent source of hemorrhage. While this type of bleeding is very often troublesome and difficult to stop, a blood transfusion may be effective when all other measures fail. Premature infants tolerate blood very well and it may be given up to 15 cc. per pound of body weight without harm. It is best not to take the blood from the mother due to the possibility of a reaction from antibody formation.

It must be remembered that hemorrhages in the newborn are frequently due to a low prothrombin content of the blood and although blood transfusions will raise the prothrombin level, this can be done more efficiently by the administration of vitamin K or related substances.

The use of transfusions in cases with hemorrhage or chronic blood loss helps to tide the patient over a critical period and frequently lessens the danger of severe damage to vital organs while the cause is being found and corrected. However, it must be remembered that this procedure raises the blood pressure and, if there is continued bleeding, due to a surgical condition, very little may be gained unless the operative measure to control the hemorrhage is performed simultaneously with the transfusion or immediately thereafter. The blood pressure must be kept up by repeated blood transfusions. Nerve tissue is damaged in a short time, and recovery is unlikely if the blood pressure remains below 60 systolic for more than two hours.

A prophylactic transfusion prior to operation is recommended when the hemoglobin is below 50 per cent or the red cell count below 3,000,000. In this connection it must always be remembered that estimates made within a few hours after a severe hemorrhage are often too high, and one must not be misled into believing that a transfusion may not be required. Transfusion has undoubtedly reduced the risk of cesarean section and the delivery of toxic patients as well as those with ablatio placentae, placenta praevia, and rupture of the uterus. Not frequently is it advisable to transfuse the patient after the operation as well as before.

CHOICE OF MATERIAL

There are four available choices with modifications:

1. Whole blood, directly given.
2. Whole blood, citrate method.
   a. Given immediately.
   b. Bank method.
3. Blood plasma.
   a. Single donor.
   b. Multiple donors (mixed or pooled plasma).
   c. Liquid, frozen or dried form.
4. Washed red cells.

An honest, common sense analysis will bring certain conclusions. Availability, speed, possible reactions, and effectiveness are all factors.

Whole blood (direct method).

1. Advantages:
   a. Complete substitution.
   b. Full benefit of antibodies (especially helpful in combating infections).
   c. Other biological effect.
      Hormonal?
      Coagulation?
2. Disadvantages:
   a. Careful matching required.
   b. Difficulty in obtaining donor.
   c. Delay in getting and giving blood.
   d. More chance of reactions.
   e. Technical trouble (air, embolism, clots, etc.).

Whole blood citrate.

1. Advantages:
   a. All blood elements present.
   b. Convenience and simplicity.
   c. Quick availability.
   d. Can be preserved for a short period.
   e. Technical problems reduced by filters and gravity method.
2. Disadvantages:
   (Similar to whole blood).
   a. Citrate may destroy platelets.
   b. Less antibody effect.
   c. Citrate may sensitize patient.
   d. Preservation requires blood bank facilities.

Blood plasma.

1. Advantages:
   a. Most available method.
   b. Simplest and quickest to give.
   c. Easily preserved for a long period.
   d. No matching required.
   e. Available when whole blood is not suitable.
   f. Replaces blood volume.
   g. Contains blood proteins.
2. Disadvantages:
   a. Does not contain all the blood cellular elements.
   b. Not effective when anemia is a factor.

Washed red cells.

1. Advantages:
   a. Only half matching required.
   b. Quick availability.
   c. Helpful in anemia.
   d. Easily assimilated, minimal load on heart muscle.
   e. Economy (cells are a by-product of serum).
2. Disadvantage:
   a. Not complete blood.

DOSAGE

The usual dose of blood for an adult is 500 cc.; only occasionally is it imperative to give more. In cases of shock or in patients with lowered blood pressure from any cause, blood should be administered until the pressure is raised to fairly normal level, whether it takes 500 cc. or 2,000 cc. If the blood pressure has been low (below 60 systolic) for any considerable length of time, it is impossible to get it up and death is inevitable. In general, 10 cc. per pound of body weight is a safe amount in children up to 20 pounds (9 kg.), although doses up to 20 cc. per pound have been used in infants.

Whitby, from war areas in London, reported that there is no evidence of danger of overloading the circulation with the massive transfusions of 5 to 7 pints, such as are often required under war conditions. Failure to restore blood volume appears to be the greatest danger.

Experience has shown that when the cardiac muscle is enfeebled the rate of transfusion should never exceed 1 cc. per pound of body weight per hour in the average case, while in cases in which the initial hemoglobin was below 25 per cent, with cachexia, cardiac disorders or respiratory embarrassment, the rate should be reduced to 0.5 cc. The hemoglobin in these cases should be restored to normal by transfusions at intervals rather than at one session. Adherence to these principles permits the circulation to adapt itself to the increased blood volume and to extrude the unwanted plasma. The use of concentrated red cell suspension transfusions is advantageous in cases with feeble cardiac muscle. Vascular accidents such as retinal hemorrhage are not uncommon with nephritis or with blood dyscrasias.

TIME ELEMENT

The most disastrous results can occur more rapidly in obstetrical cases than perhaps in any other field. Tisdall has recommended the use of blood plasma in obstetrics, particularly because it is convenient and quickly available. Speed and convenience in administration are very important factors in many of these cases.

He has found that at least two hours will elapse from the time the donor is called until the blood is available. If donors are in the hospital, forty-five minutes will usually elapse before the transfusion reaches the patient. When blood is obtained from the blood bank it is found that a minimum of thirty minutes is required before the blood is received, whereas when either serum or plasma is available it can be started within a few minutes.

With this in view, Tisdall has recommended that every hospital have blood plasma available, particularly for the obstetrical service. Pooling, he reports, complicates the procedure somewhat and for that reason he has recommended the procedure of individual flasks from each donor.

In deciding when to give blood or blood substitute, whether preoperative or postoperative, the general rule should be to treat the patient first and the local condition next. This, to be sure, requires close correlation. If definite figures are to be given, a hemoglobin of 50 per cent or less, and a red cell count of 3,000,000 or less, certainly requires systemic treatment before attempting a local correction.

SPECIAL MODIFICATIONS IN TECHNIQUE

Autotransfusions are done occasionally in some clinics and deserve mention. The blood from a ruptured ectopic pregnancy, liver or spleen is sterile and may not be coagulated in the peritoneal cavity; the same is true of blood in the pleural cavity. This blood may be collected, filtered through several layers of gauze and at times diluted with salt solution and injected into the vein of the patient in a grave emergency. This method is not without danger, however, particularly from the factor of infection. Many think this should be used only as a method of last resort.

Some investigators advise that any blood found be left in the peritoneal cavity because it is absorbed from this location rather readily.

Two special modifications may be mentioned here in the use of whole blood in treating infectious conditions. The first of these was reported by Jeanin and Chome who applied it particularly in the treatment of puerperal infections. The blood was obtained from previously immunized individuals (those who had been given vaccines) or from one who had previously had puerperal infection. Obviously this type of therapy is not limited to the puerperal state but the same general principles may be applied in treating infectious conditions under other circumstances. The principle, of course, is to use previously built up antibodies from another individual in fighting the infection in the patient. This is according to the old principle of passive immunization.

Rebbreck reports excellent results with autotransfusions of blood which has been irradiated with ultraviolet. The blood is drawn off, passed through a specially devised chamber with quartz window which allows the ultraviolet ray to have full effect on the blood. It is then reinjected with beneficial results reported. This same principle may be applied when properly matched whole blood is given, if the donor has previously had a similar type of infection so that the specific antibody has likely been developed.

CAUTIONS IN OBSTETRICAL TRANSFUSION

A paper on blood or blood substitutes for the mother and baby would not be complete unless definite, though brief, mention is made of the Rh factor. The antibody of the Rh factor is considered the etiological factor in erythroblastosis fetalis. When the mother is Rh negative and the baby is Rh positive (from the father) an antibody develops in the blood of the mother which reacts on the fetal circulation, destroying cells. The presence of this antibody makes the use of the father's blood for the mother, or the mother's

blood for the baby very dangerous, at times even fatal.

CONCLUSION

A few do's and don'ts may help in a conclusion.

Do:

Treat promptly, early, repeat if necessary.

Check carefully the donors.

Consider bleeding obstetrical patients very dangerous.

a. Placenta praevia.

b. Premature separation.

c. Postpartum hemorrhage.

Treat patient—then local condition.

Don't:

Give mother's blood to baby; there are more chances of reaction.

Give husband's blood to mother unless carefully checked for off standard types.

Consider transfusion a procedure without potential harmful effects.

Use transfusion to cover up an improper study of the patient.

Let "speed" override proper laboratory checks when needed; it may be fatal.

Use transfusions as a "cure all."

BIBLIOGRAPHY

Anspach, Brooke M.: *Ectopic Pregnancy*, Obstetrics and Gyneoclogy, Vol. III (Curtis) page 369.

Chandler, C. A., and Janeway, C. A.: *The Treatment of Hemolytic Streptococcal Infections During Pregnancy and the Puerperium, with Sulfanilamide and Immunotransfusion*, Am. J. Obst. and Gynec., 38:187 (August) 1939.

Fitzgerald, Bertram John, and Koch, Summer: *Blood Transfusion*, Ob. and Gynec., Vol. III (Curtis) page 951.

Jacobs, J. Bay: *The Value of Blood Transfusion in Obstetrics*, Medical Journal and Record, 136:463, December 7, 1932.

Jeanin, C. and Chome, E.: *Immunotransfusion with Convalescent Blood in the Treatment of Puerperal Infections*, Bull. Acad. de med., 111:780 June 5, 1934.

Mely: *Blood Transfusions Before, During, and After Operations Performed at the Strassbourg Gynecologic Clinic*, Bull. de la Societe d'Obstetrique et de Gynecologie, 26:690, October, 1937.

Rebbreck, E. W.: *Ultraviolet Irradiation of Autotransfused Blood in the Treatment of Puerperal Sepsis*, Am. J. of Surg., 54:691, December, 1941.

Schaefer, Arthur A.: *Blood Counts, Blood Groups, and Transfusion*, Cp. 2, Vol. III, Gynecology and Obstetrics (Davis).

Serdukoff, M. G., and Leviskaia, M. K.: *Blood Transfusion in Certain Gynecologic Affections*, Gynecologie et Obstetrique, 30:139, August, 1934.

Sheehan, H. L.: *Blood Transfusion for Obstetric Hemorrhage and Shock*, J. A. M. A., September 12, 1942, page 158.

Thalhimer, William: *Intravenous Injection of Pooled Normal Plasma or Serum*, J. A. M. A., December 19, 1942, page 1263.

Tisdall, Leslie Hughes: *Plasma in Obstetrics, with a Simple Method for Its Production*, Am. J. of Obst. and Gynec., 42:889, November, 1941.

Vago, A.: *The Use of Blood Transfusions in Obstetrics and Gynecology*, Zentralbl. f. Gynak., 44:1087, 1920.

Whitby, L. E. H.: *The Hazards of Transfusion*, Condensed from the Lancet, 1:581, 1942.

Watson, Benjamin P.: *Puerperal Sepsis and Thrombophlebitis*, Ob. and Gynec., Vol. II (Curtis) page 194.

What the Army Wants

There has been a good deal of discussion, and some criticism, because young physicians especially trained in particular fields cannot be given an assurance of Army assignments in those special fields. All through the months during which physicians have been recruited for Army medical service there has been a hope and perhaps an early understanding that medical officers would be assigned to those duties for which they are especially qualified, and that the "square peg in round hole" errors of World War I might be eliminated.

Comments in this connection made by Col. George F. Lull, of the Personnel Division of the Surgeon General's Office, are of interest. Colonel Lull, speaking before the Michigan State Medical Society in Grand Rapids late in September said:

"Not the least of the Army's medical personnel problems is to find doctors—especially young doctors—who don't consider themselves specialists. * * * Nor can they understand why they have to spend their time training men for combat duty when they would so much rather be seeing patients. They don't realize that their greatest opportunity for saving men's lives will come to them not in the hospital back of the lines, but in the emergency treatment they give in the thick of battle."

Colonel Lull also said: "In contrast to the last war, which made specialists out of doctors, this war is making doctors out of specialists."

It was also Colonel Lull's opinion that opportunities for promotions for medical officers are greater in tactical than in hospital units.

These statements and opinions from Colonel Lull, whose knowledge and judgment must be respected, should be given careful consideration by prospective officer candidates. — *Connecticut State Medical Journal.*

VIRUS PNEUMONIA *

By WILLIAM C. STEWART, M. D.
Charleston, West Virginia

During the last two years a great deal of interest and speculation has been provoked by the increasing occurrence of an acute respiratory infection having many of the characteristics of pneumonia but presenting many atypical features, as compared with previous conceptions of this disease. There is some question as to whether these pulmonary infections should properly be called virus pneumonia. Many other designations have been used such as, "acute pneumonitis", "influenzal pneumonia", "bronchial pneumonia of unknown etiology", "Q. pneumonia" and many others too numerous to mention. Each describes some feature of the disease as seen by the particular investigator but none has been found entirely satisfactory. The basic difficulty of course is the persistent inability of anyone to isolate and demonstrate the presence of a virus as the etiological agent in these cases of pulmonary infection. In a recent "official statement" by the director of the Commission on Pneumonia of the United States Army, it was suggested, that for purposes of classification these cases be designated as "primary atypical pneumonia, etiology unknown." However, in view of the established usage of the name virus pneumonia, it may be well not to abandon the term too hastily. It has a certain helpful connotation in the minds of many physicians, and as a matter of fact further investigation may establish the designation as proper from an etiological standpoint.

Many efforts have been made to produce in animals and fowls disease conditions following exposure to material taken from patients suffering with pulmonary infections such as are being considered here. Horsfall and Weir[1] were able to produce a type of pulmonary consolidation in the wild mongoose by the injection of throat washings from typical cases of virus or atypical pneumonia. Enders, Sullivan[2] and others took material from 11 cases but were unable to produce any recognizable pathological change in the animals used. By far the most promising work has been done in showing the possible relationship of virus pneumonia to psittacosis and other fevers which effect various fowl. Pinkerton[3] and others have demonstrated the widespread presence of a psittacosis-like virus among pigeons and other fowl, and the handlers of the fowl have shown a considerable incidence of virus pneumonia. The complement fixation test for psittacosis has been done on cases of virus pneumonia reported by Reimann[4] and others, and the resulting titers have suggested the disease may be due to a virus related to the psittacosis virus, if not the same. The possibility that many of the cases of virus pneumonia are manifestations of psittacosis itself has been suggested but is not adequately supported by the evidence at hand.

Though the proper postulates for determining the etiology of the group of pulmonary infections under discussion has not been fulfilled, a suggestive group of evidence is available. This evidence may be summarized as follows:[5]

1. Inability to isolate the usual pathogenic bacteria from sputum and blood.

2. Failure to respond to sulfonamide therapy.

THE AUTHOR

Dr. Stewart, graduate Harvard Medical School, 1932; interned Massachusetts General Hospital and Boston City Hospital; Internal Medicine and Cardiology.

*Presented before Academy of Medicine of Parkersburg, West Virginia, May 5, 1943.

3. The experimental work cited previously.

4. Certain clinical features such as the frequent leucopenia or normal WBC count which is found.

It may be that many viruses are involved and that in time these may be identified and a classification worked out such as has now been done with the pneumococcus pneumonias.

NEW CONCEPTION

It is in a consideration of the clinical aspects of virus or atypical pneumonia that one becomes convinced that there is justification for the belief that something different from our previous conception of pneumonia is being seen. Most physicians can recall cases of pulmonary infection which seemed to them at the time to present irregular or atypical features. It is likely that virus or atypical pneumonias have been encountered for years but it is almost certain that the recent occurrence of the disease in almost epidemic proportions, is a new development. The disease has been reported from widely scattered points over the globe such as Hawaii, England and all regions of this country. It has been particularly prevalent in the southern and southwestern areas of the United States. It has shown no partiality for one sex or the other, but has been almost entirely limited to adolescents and young adults.[6] Most of the reported cases have occurred in the late fall and winter but the epidemic reported by Reimann and Havens[7] took place between January and May. Murray's[8] cases occurred in the fall and my experience with the disease has been at a comparable season. However, one of the most satisfactory reports in the literature is that by Duggan and Powers[5] of an epidemic occurring in June, July and August of 1941 among naval personnel at Corpus Christi, Texas.

From a clinical standpoint a classical pattern is becoming apparent. The disease has usually been only moderately severe, with recovery the rule. However, many of the cases of Reimann and Havens[9] were very ill and one-sixth of the cases of Duggan and Powers[5] had fever to 103° and 104° and were definitely sicker than the remainder of their cases. Longcope[10] has observed that patients may contract a severe form of the disease from those only mildly ill and vice versa. He believes that variations in the disease may be due to individual susceptibility or immunity as the case may be, rather than to a different virus being responsible.

SUGGESTIVE OF INFLUENZA

The onset of virus or atypical pneumonia has almost always been insidious with a gradually changing picture. The picture has been very suggestive of influenza, in its early stages. There is practically never a chill at the onset in contrast to classical lobar pneumonia, and while frequent chilly sensations may be noted a genuine shaking chill with subsequent rise in fever is very rare. The respiratory symptoms begin very mildly and cough is only slight. Sputum is entirely lacking early in the disease and at no time is it typically prune juice in character and very rarely is any blood seen. Late in the disease the sputum may become mucopurulent but is not often large in quantity. The cough which at the onset is insignificant, usually increases and in the late stages may become hard, persistent and extremely harassing. Even then it is not usual to raise much sputum. Pleural involvement with chest pain is almost entirely absent and although there may at times be some general discomfort over the chest a true pleuritic pain is seldom encountered. Fever is generally not high, usually not going higher than 102° but as indicated previously some cases do have fever up to 104°. Usually, generalized aching, with malaise and headache are in proportion to the fever. The ending of the disease may be as indefinite as the beginning. The cough is apt to persist some time after the fever has disappeared and the length of the illness frequently may extend to as long as 21 days.

Physical examination is usually entirely negative for three to five days after onset. Then râles may be heard at one or both lung

bases or in the mid-chest. These râles often are heavy and crepitant but evidence of consolidation and bronchial breathing are not commonly found. Involvement of the upper chest is unusually rare and pleural manifestations almost never occur. Development of fluid in the pleural spaces is very rare and empyema practically unheard of. Delayed resolution of the pneumonic area is at times a very striking and troublesome phenomenon. Complete recovery without residual pulmonary damage is practically invariable.

As previously pointed out, normal blood counts or leucopenia, are characteristic of virus or atypical pneumonia. The white blood count usually does not advance beyond 10,000. Laboratory findings are otherwise negative also. The sputum has revealed nothing generally, at times streptococci, staphylococci or other organisms. Blood cultures and various agglutinations have been negative.

X-RAY FINDINGS

Many descriptions of the x-ray findings in virus or atypical pneumonia have been recorded. Since the x-ray has been the most consistently helpful method of study in these cases, its findings are important. Changes in the lungs can be found by x-ray several days before they become apparent on physical examination. Very early in the disease the hilar shadows on one or both sides become prominent. Gradually an infiltration outward and downward takes place, the distribution generally being lobular instead of lobar. The infiltrated area is soft, either mottled or homogeneous, being denser at the hilus and shading off toward the periphery. It is rare for the upper chest to be involved. Many variations from the above have been noted and there is still considerable confusion on many points. No description has yet received wide acceptance as being characteristic.

Treatment of virus or atypical pneumonia is entirely symptomatic. Various sulfonamide preparations have been entirely without effect. The failure of these pulmonary infections to respond to sulfonamide chemotherapy has been one of the most striking characteristics of the disease.

PATHOLOGY

Death from virus or atypical pneumonia is extremely rare and consequently very little is known about the pathology of the disease. Kneeland and Smetana[11] and Longcope[10 12] have reported a patchy, interstitial bronchopneumonia. There may be small areas of red or gray consolidation. These findings are similar to those found in other virus diseases such as psittacosis and also those found in pneumonia associated with influenza. Adams[13] has reported finding acidophilic inclusion bodies in the bronchial epithelial cells of some of his fatal cases in infants. The presence of such inclusion bodies suggests a virus etiology, since these types of inclusion bodies have been found in diseases known to be of virus origin. But much more material evidence is necessary before any reliable conclusions can be drawn regarding the pathology of virus or atypical pneumonia.

The foregoing has been an attempt to summarize the present knowledge of an interesting pulmonary infection which has been occurring with increasing frequency. My personal experience with this condition has been limited and justifies reporting only because it may be in some respects similar to your own and consequently of some interest. In October of 1942, I saw a patient with the following history: She was a woman of middle age who had been sick with a low grade fever for several days. She complained of generalized aching and some cough. She had tried various home remedies but did not improve and the cough had become very severe. At this time she did not seem very sick and her temperature only reached 100° in the afternoon. Her cough, however, kept her awake most of the night and she was admitted to a hospital for study. In going over her chest I was amazed to find intense congestion at the right lung base. A chest x-ray showed a diffuse pneumonic involvement of the right lower chest. Her white blood count was normal. In an effort to

relieve the cough she was given sulfathiazole but fever and cough persisted. She raised no sputum, had no history of any chill and at no time had any chest pain. Very gradually she improved but resolution of the congestion in the right lower chest was extremely slow. Recovery was complete.

During the months of October and November I encountered several other cases of this type. In recent years when dealing with pulmonary infections I have turned to sulfonamide chemotherapy with confidence but during this period I saw it fail completely many times. It was a shocking experience for me. These cases followed a pattern previously described in this paper. The onset was insidious and without chill or pleural pain and with no sputum. The pulmonary signs developed slowly and were invariably in the lower chest. The course of the disease was mild but hard coughing with delayed resolution was common. The white blood count was never elevated. Recovery was the rule.

During this time I encountered two cases having much in common with those just described but very different in a vital respect. These patients were both forty years of age. They developed mild pulmonary infections which were soon complicated by a very distressing cough and intense asthmatic manifestations. They had low grade fever, normal white blood counts and their infections did not respond at all to any sulfonamide preparation. By x-ray one case showed a diffuse bronchitis, the other showed a pneumonia of the left lower chest. Neither of these patients had ever previously had any asthmatic manifestations. Both were critically ill with extremely stubborn asthma for many days and resolution was very slow. I suspected that these were cases of a virus infection but, of course, proof of this was lacking.

Since December I have not encountered any further cases which seemed to me to fulfill the requirements of virus or atypical pneumonia. During this time several typical cases of lobar pneumonia have been seen. Unfortunately, it is probably safe to predict a bright future for virus or atypical pneumonia and we shall probably see more of it.

REFERENCES

1. Weir, J. M. and Horsfall, F. L., Jr.: Journal Experimental Medicine, 595-610, 1940.
2. Enders, J. F., Sullivan, E. R., Hammon, W. D., Meakins, J. L.: Cited by Murray.[8]
3. Meyer, Pinkerton, Francis and Eaton: Quoted in editorial.[6]
4. Kornblum, K., Reimann, H. A., Price, A. H.: Radiology, January, 1943.
5. Duggan, L. B., Powers, W. L.: Journal of Laboratory and Clinical Medicine, January, 1943.
6. Dingle, J. H., Finland, M.: New England Journal of Medicine, September 3, 1942.
7. Reimann, H. A., Havens, W. P.: Arch. of Internal Medicine, 138-150, 1940.
8. Murray, M. E., Jr.: New England Journal of Medicine, April, 1940.
9. Reimann, H. A., Havens, W. P.: Arch. of Internal Medicine, October, 1942.
10. Longcope, W. T.: Practitioner, 148, 1942. Quoted in 6.
11. Kneeland, Y., Smetana, H. F.: Bull. Johns Hopkins Hospital, 67, 229-267, 1940.
12. Longcope, W. T.: Quoted in 6.
13. Adams, J. M.: J. A. M. A., 116: 925-933, 1941.

First Woman Commissioned Officer

Dr. Margaret D. Craighill, Dean of the Woman's Medical College, Philadelphia, is the first woman to be commissioned an officer in the medical corps of the United States Army. Dr. Craighill accepted a commission as Major on May 10, 1943, under the provisions of the Sparkman Bill which was signed by the President on April 16. She has reported for duty in the Department of Preventive Medicine, Surgeon General's Office, Washington.

For Whom the Bell Tolls

In 1881 the College of William and Mary in Virginia closed its doors for nearly seven years. The battles of the Civil War had been fought up and down the Peninsula and had left the college physically in ruins; and although it struggled to keep going during the bitter time of Reconstruction, it was finally overborne by financial catastrophe. But every morning during those seven barren years President Ewell rang the chapel bell. There were no students; the faculty had disappeared; and rain seeped through the leaky roofs of the desolate buildings. But President Ewell still rang the bell. It was an act of faith. It was a gesture of defiance. It was a symbol of determination that the intellectual and cultural tradition must be kept alive, even in a bankrupt world.

In every school, college and university of America today we need to hear that bell ringing.—*The Rockefeller Foundation, A Review for 1942.*

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CATALASE AND PEROXIDASE IN PATHOLOGICAL URINE

By LEO I. HALLAY, M. D.
Fort Blackmore, Virginia

To be oxidized in the body, foodstuffs or metabolites require the presence of a great variety of highly specific protein molecules known as enzymes in general and as oxidases insofar as they assist the oxidation processes. One group of these oxidases is characterized by the presence of a structural unit known as porphyrin. The porphyrin was found by Fischer to consist of a framework of four pyrrole rings linked together into a higher complex system by four methin (CH) groups. The oxidases, which are porphyrin compounds, are known to contain iron either in the ferrous or in the ferric state. The various kinds of porphyrins in existence are characterized both by their side chains and by the arrangement of their side chains which makes many isomeric forms possible. The isomers are denoted by Roman numerals.

The decomposition of hydrogen peroxide by living cells was alleged by Loew in 1901 to be due to a specific enzyme. The enzyme which catalyzes the decomposition of hydrogen peroxide into water and oxygen was named catalase. Like the rest of the enzymes catalase can be reversibly resolved into a protein and a substance of a relatively low molecular weight, which is referred to as the prosthetic group. The prosthetic group of catalase was found to be protoferriheme IX. It was also found to contain the iron free porphyrin derivative biliverdin. Catalase has a molecular weight of 248000; each molecule of it contains three molecules of Fe-porphyrin (protoferriheme IX) and one molecule of biliverdin.

The catalytic power of catalase is due in the final analysis to the catalytic power of the central iron atom. By the linking to the porphyrin molecule the iron atom has developed a high degree of catalytic activity. Under conditions in which simple iron salts decompose 10^{-5} mols of hydrogen peroxide, hemin (Fe-porphyrin) will split 10^{-2}, which is 1,000 times more. The highest degree of catalytic activity is achieved by the iron atom upon linking of protoferriheme IX to a specific protein and forming in this way the enzyme catalase. Catalase, according to Stern, is capable of decomposing 10^5 mols of hydrogen peroxide/sec. under optimal conditions, which is 10^{10} times more than simple iron salts. This immense increase of catalytic activity is gained by a proportionate decrease in the number of substrates which may be attacked by an enzyme. So peroxidase has lost the power of hemin to split hydrogen peroxide without the presence of an oxygen acceptor, and catalase is deprived of the peroxidatic activity. Peroxidase catalyzes the oxidation of a variety of compounds by means of hydrogen peroxide.

These properties of catalase and peroxidase have caused the development of a number of laboratory tests for the determination of blood and pus in both the urine and in feces. They are based on the fact that erythrocytes contain both peroxidase and catalase, and when hydrogen peroxide, acetic acid and benzidine base, o-toluidine, or guaiac are added to the specimen a blue color develops which is due to oxidation of the substrates. Pus cells give an unspecific catalase reaction but in the absence of erythrocytes no color reaction for peroxidase can be elicited. The catalase reaction of pus and blood and other

THE AUTHOR

Dr. Hallay, graduate University of Jena (Germany) Medical School, 1928; Postgraduate work in Psychiatry and Neurology in Germany, Czechoslovakia and United States; naturalized in 1943; member Medical Society of Virginia, Clinch Valley Medical Society, and A. M. A.

living cells can be, and probably has been, observed by almost every physician who has applied hydrogen peroxide to an open wound or to an open abscess. This always causes effervescence due to oxygen development which can be both seen and heard.

NORMAL URINE

The normal urine does not contain any living cells, nor especially erythrocytes. Accordingly no catalase or peroxidase reaction can be obtained in the normal urine. Therefore when hydrogen peroxide is added to a sample of normal urine, no signs of oxygen development can be seen. Neither does the addition of acetic acid and benzidine base give a blue color because of the absence of peroxidase-containing erythrocytes. In a pathological urine containing either pus or blood or other living cells the addition of hydrogen peroxide to a sample of the urine will result in an effervescence due to development of oxygen which is caused by splitting of hydrogen peroxide into water and oxygen by the catalase. This phenomenon expresses a positive catalase reaction and further examination of the urine is obviously necessary. Acetic acid and benzidine base can be added to the same sample and if a blue color develops due to peroxidase, then the catalase reaction was caused by erythrocytes. If this peroxidase reaction is negative then a strong NaOH solution can be added to a sample of the urine which would cause permanent bubbles if the urine contains pus (Donné's test). A positive catalase reaction in a urine negative for peroxidase (benzidine test) and for pus would suggest that the urine contains other living cells or tissues and a microscopic examination would appear to be necessary. The presence of sulfonamides in the urine not only does not interfere with the catalase reaction but, according to my experience, seems to intensify it.

The strongest catalase reaction was seen by me in a case of papillocarcinoma of the bladder. This patient's urine yielded a marked peroxidase reaction while bleeding was taking place. However, in the intervals when the patient was not bleeding, and especially while tissue debris was coming out of the bladder, the catalase reaction was so strong that a single drop of the urine would cause an explosive effervescence in a solution of hydrogen peroxide in water. This experience seems to contradict several publications which claim a decrease of the catalase content of cancer tissue. Nevertheless, the fact remains that in this particular case, with death from a papillocarcinoma of the bladder, the urine gave a stormy catalase reaction.

SUMMARY

The oxidases contained in living cells can be used in the country practice for simplified laboratory examinations of the urine. A negative test for catalase (no effervescence when hydrogen peroxide is added to the urine) obviates the necessity of other tests. If the catalase test is positive, blood can be excluded by the benzidine test for peroxidases, and pus cells by the Donné test. A negative benzidine test for blood and Donné test for pus in urine positive for catalase suggests the presence of other living cells and possibly a malignancy.

REFERENCES

Green, David E.: *Mechanisms of Biological Oxidations.* Cambridge University Press, Cambridge, 1940.

Stern, Kurt G.: *A Symposium on Respiratory Enzymes.* University of Wisconsin Press, Madison, 1941.

War Worker's Lunch

The typical "stenographers' lunch" of cake and "cola" seems to have been carried over to war workers in heavy industry. A recent survey of luncheon trays in four leading war plants in the Chicago area revealed that only eight per cent of the employees ate sanely. Twenty-one per cent made a choice of food close to the borderline of malnutrition, while 71 per cent purchased totally inadequate meals.

Lack of money was not the cause of the choice nor the lack of good foods, but rather a lack of appreciation of essential foods, for instead of meat or cheese sandwich, doughnuts were ordered, instead of a salad sweets were the choice, and instead of milk the anemic food was washed down with soda pop.—*New York State Journal of Medicine.*

The President's Page

In adopting a cancer control program for West Virginia, the Legislature wisely designated the Public Health Council as the directing agency. Likewise, provisions were made for the care and treatment of the indigent tuberculous patient under the direction of the Council. This is the first time in the history of West Virginia that the medical profession, through the Public Health Council, has assumed this responsibility to the public. The members of the Council are to be commended for their impartial, business-like, and non-political approach in working out the many details incident to the establishment of this humanitarian program. There are, however, pitfalls that should be guarded against, and I have in mind the danger of slowing the program with red tape, particularly with reference to the hospitalization of the tubercular patient.

The cancer control bill provides, among other things, that diagnostic clinics are to be established in approved hospitals, primarily for the indigent cancer patient. I am quite sure that those who are familiar with the cancer situation realize that the appropriation of fifty thousand dollars will provide only for outpatient clinics, as part of this sum will have to be used for administrative purposes in connection with the establishment of the new division of cancer control in the State Health Department, and the continuance of needed educational work that is now being carried out so ably under the direction of Mrs. John Speed Harvey, State Commander of the West Virginia Division of the Woman's Field Army of the American Society for the Control of Cancer.

With undue economy, there might be a few thousand dollars available for hospitalization and treatment, which, in view of recent statistics, would only care for a very small percentage of our indigent cases. It is to be hoped that the Department of Public Assistance will appreciate the gravity of the situation and continue to provide for these unfortunate individuals until the Legislature can appropriate additional funds for this work.

The West Virginia State Medical Association program, whereby the care of indigent patients in our state institutions will be under the direction of trained physicians, who constitute our public health council, is a step forward. The program assures patients of adequate treatment and care, and affords ample protection to the taxpayer.

West Virginia Medical Journal

Official Journal of
The West Virginia State Medical Association
302 Atlas Bldg., Charleston, West Va.

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Published monthly on the first day of the month, at Charleston, by The West Virginia State Medical Association.

Original articles are accepted on condition that they are contributed exclusively to the Journal.

Advertising rates furnished upon request. All advertisements must conform to the standard established by the Council of Pharmacy and Chemistry of the American Medical Association.

Address all communications to Business Manager, West Virginia Medical Journal, Box 1031, Charleston, West Va. Phone, Capitol 34-625.

SUBSCRIPTION $3.50 PER YEAR

Entered as second-class matter, January 1, 1926. Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917. Authorized July 24, 1919.

MEDICAL EDUCATION PLANS*

When public announcement was made that approximately twenty medical students of West Virginia University who had completed the two-year program in the medical sciences would be sent annually to the Medical College of Virginia, Richmond, for the third and fourth years of the medical course, unexpectedly widespread reaction to the proposal resulted. Southern educational leaders, medical educationists from coast to coast, and the public press from the Mississippi to the Atlantic Seaboard in particular became interestingly vocal. In setting forth here some of the reactions received, liberties have been taken in instances to change the form of sentence structure, and to soften somewhat the personal, and particularly the complimentary, character of the letters received.

Deans of medical schools and others directly concerned with medical education made such comments as these: "Shall be glad to have opportunity to observe the progress of this experiment in medical education"; "a great thing for West Virginia, and, as dean of a two-year school, can only envy the West Virginia medical school the connection with your institution"; "much of the pioneer spirit is seen in the movement"; "glad you had the foresight and courage to make this arrangement"; "much interested in seeing how the plan works out and to know more of the details"; "we are fortunate in having your cooperation in this important project", says a West Virginian; "especially interested in the program which you have worked out for I believe it may serve as a pattern for a sound development for other states to follow"; "the wisdom and feasibility of the plan as worked out commends itself to any thoughtful student of medical education"; "a very wise method of meeting a serious problem"; "will likely lead to similar cooperative programs between other two-year and four-year medical schools"; "congratulations on this significant achievement in medical education and general higher education in the South"; "a master stroke of social statesmanship"; "very sound method of cooperation for both of the Virginias"; "a splendid cooperative plan"; "it has excellent possibilities"; "much interested that two states will cooperate in medical education and think it excellent"; "it is going to be an interesting experiment and I wish you every success"; "congratulations on the idea and the good move"; "most interested in report of what seems to be a very wise and progressive movement in medical education"; "it should be far more effective than the organization of a separate four-year school"; "it looks to me as though this is a sound, economical and worthwhile undertaking for both states"; "it seems to be an excellent solution for West Virginia's problem and a fine thing for Virginia to do"; "very worthwhile arrangement for the Virginias and in time other similar plans of cooperation may be worked out in medicine and other fields"; "I hope it will set a pattern for similar cooperation in other places."

Many responsible educational authorities in the South see in the new medical educa-

*Guest editorial by Dr. W. T. Sanger, President, Medical College of Virginia, Richmond, Virginia.

tion plans for the West Virginia University and the Medical College of Virginia a pattern for securing a better quality of technical, professional, and narrowly specialized graduate education at less cost than is possible where each state attempts to engage in every form of higher education. This group sees the wisdom of inter-state and regional education both for white and Negro students and believes that the West Virginia-Virginia precedent will have a wholesome effect upon provincialism and local ambitions to engage in too many forms of advanced education. Reference was also made to the transitional period in which we now find ourselves as affording opportunities for pioneering. One comment runs, "this is a most commendable piece of legislation and it adopts the policy that must in my opinion be followed in an increasingly larger number of institutions in the South"; and again, "If the administrators of universities in the South could get together on a program of regional education at professional and higher levels, we would have better universities at less cost."

Only a partial effort was made to follow the comments of the press since the first story of the cooperation between the Virginias in medical education broke last October. In instances the same newspaper carried both news and editorials about the project, all decidedly favorable; others reprinted editorials. The Associated Press requested copy, and, finally, a signed article by Mr. Virginius Dabney, editor of the Richmond Times-Dispatch. This is known to have appeared in these Sunday papers, perhaps others: New York Herald-Tribune; Baltimore Sun; Charleston, South Carolina, News and Courier; Cincinnati Enquirer; Chattanooga Times; Louisville Courier Journal; and, the Birmingham News. An editorial, *Inter-State Comity in Ideas* early appeared in the Richmond News Leader. Mr. Dabney's editorial, *A Pattern for the South and the Nation,* Richmond Times-Ditpatch, March 24, 1943, was quoted, or reprinted, in the Birmingham Age-Herald; Louisville Courier Journal; Des Moines Tribune; Atlanta Constitution; Saint Louis Dispatch, and Newsweek. An editorial in the Washington Post on April 14, 1943, *For Regional Education,* was also reprinted elsewhere.

In final comment, it can be said that our plans for medical education for the Virginias have been warmly applauded as likely to influence higher education on an inter-state and inter-institutional basis in many sections of the country for a variety of students both white and Negro, and that leaders for some time have widely recognized the wisdom of such procedures in which two states have now taken the initiative.

—W. T. SANGER, M. D.

GLOBAL TUBERCULOSIS CONTROL

It is an observed fact that increase in the incidence of tuberculosis is a postwar phenomenon, especially in those areas which have been subject to combat and hostile occupation. Chas. M. Hendricks, the very able and far-seeing Chairman of the Council on Military Affairs and Public Health of the American College of Chest Physicians, in the May-June issue of *Diseases of the Chest,* presents a plan for tuberculosis control in occupied areas. He cites the increase of 75% in tuberculosis deaths in German occupied France after World War I and estimates the number of cases of tuberculosis now existing in Europe as 10,000,000. He also quotes a recent report from Belgium to the effect that childhood tuberculosis in that unfortunate country has increased 80% since the Nazi occupation and that 4,000 new childhood cases are now being reported there each month.

Briefly, his plan envisions a U. S. Military Tuberculosis Commission the function of which would be "to assemble and classify all obtainable information pertinent to the protection of our own troops, and the study and control of tuberculosis in each country most likely to be occupied by units of the U. S. Army; to select for the approval and appoint-

ment by the Surgeon General medical personnel to constitute 'Tuberculosis Control Teams'; and, to administer the training of control teams utilizing all assembled information in order that the control teams may accomplish their mission in each specific country when occupied."

The future we see through a glass, darkly, but certainly many foreign areas must be occupied by American troops for a long time after "cease firing" has been sounded. Many of these occupied areas will be in the tropics, and if Pila's picture of tuberculosis in Puerto Rico in an index of tuberculosis in the tropics generally, the "great white plague" will loom large as a disease control problem for the medical service of our occupying forces.

NO COMPLAINTS

Although a letter is received almost every day by the headquarters office of the West Virginia State Medical Association from some doctor in the military service, it is remarkable that no complaining note is ever sounded concerning the things that go to make up life in our armed forces. Our doctors praise the food, living quarters, equipment, personnel, and camp life in general.

Occasionally, impatience is shown, not because of conditions in camp, but solely on account of the lack of action. There is definitely a desire on the part of many to have additional work assigned to them. Washington is aware of this, and during the recent sessions of the House of Delegates of the American Medical Association, at Chicago, Surgeon General Kirk made the statement that the most difficult problem with which his office has to contend at the present time is that of keeping doctors satisfied with routine camp life until they can be assigned to field or base hospital duty with our military forces.

It is disconcerting to say the least for a doctor who has been busier at home than at any time in his entire medical career to try to adjust himself to a condition in camp that calls for active work for a total of but two to three hours each day. However, they are looking at these matters philosophically, and the general response to inquiries concerning their well-being is that everything is fine and that military life is most interesting.

Our doctors in service have developed a sort of superoptimism. They believe in the things for which they are fighting and they are willing to remain at their post, however seemingly idle, until the job is finished. The sacrifices that they have made and are making will not be forgotten when peace comes and it is possible for them to resume their normal life and work back home.

SHOULD DOCTORS TELL THE TRUTH?

Not many months ago, the question, "Should doctors tell the truth?" was answered affirmatively by Dr. J. Shelton Horsley in the Virginia Medical Monthly. The paper was reproduced without comment by The Medical Bulletin (Wichita, Kansas), together with the contrary views of Dr. Oliver Wendell Holmes as expressed in "The Autocrat of the Breakfast Table."

Pro

In the opening paragraph of this paper, Dr. Horsley presents a problem with which every doctor is no doubt confronted not once, but many times during his medical career:

"A woman with a suspicious lump in her breast consults a doctor. She is accompanied by her daughter or a relative or friend who, in a private interview, requests the doctor not to tell the patient that she has cancer if this is the diagnosis, because the patient will be profoundly shocked if she knows the truth. The doctor is urged to inform the patient that the tumor is benign, even if he believes it to be cancer."

Then he continues:

"Many years ago, the late Dr. Richard C. Cabot conducted an investigation as to the wisdom of truthfully informing patients about their disease. Using as controls patients who were purposely deceived about their condition, he concluded that from the clinical standpoint alone the patients who were told the facts seemed to do better than those

who were deceived. If a policy of deception is deliberately pursued, the patient sooner or later usually learns the facts. There can be no intelligent cooperation in the treatment. The relative or friend will unconsciously lose respect for the veracity of the doctor, whether he be family physician or surgeon. If, in the future, the daughter has a lump in her breast and goes to the same doctor and he tells her that the growth is not malignant, the daughter will think he is deceiving her, too. How is she to know when he is telling the truth?

"Thus an increasing distrust of the medical profession is bred. The very basis of scientific work is a search for truth, and doctors in the operating room, or at the bedside, or in the laboratory cannot consistently pursue the search for truth when in their communications with the patients, they are purposely suppressing it. How can we expect an intelligent public to respect a profession that deliberately deceives the patient.

"How can a patient reach a proper decision as to the adoption of the doctor's advice for treatment of an ailment if the fundamental facts in the case are withheld from the patient? Of course, it is unnecessary to pour brutal truths into a patient's ear unless the patient wishes to know the truth. When the patient's relatives earnestly request that an offensive diagnosis be withheld, the doctor may respect such a request by telling the patient that this information has been imparted to the family and he prefers not to discuss the case with the patient. Then the relatives and friends can do their own lying.

"Naturally the doctor should put as optimistic an outlook on any clinical situation as the facts will justify, but this is quite aside from adopting the policy of telling the patient that there is no malignant disease when the doctor believes that the patient has cancer. We owe it to the public and to ourselves to tell the patient the true situation, if the patient requests this information, and to maintain a policy that will not only be worthy of the fullest confidence of the public but at the same time will not tend to weaken our own respect for the truth.

"An additional incentive for telling the patient the truth is reported by Dr. Elmer Belt, of Los Angeles. He operated upon a patient for carcinoma of the prostate. The daughter of the patient requested Dr. Belt not to tell her father that he had cancer, and the doctor complied with this request. The patient later found that he did have carcinoma of the prostate and filed a suit against Dr. Belt for $113,500 for not telling him that he had cancer. The patient had made some financial commitments which he would not have made had he known that death was imminent. The patient said that he knew his daughter was a partner in the false presentation but he could not sure her, so he sued the doctor. The doctor employed the best legal minds to help in the problem, because this point had never been tried in court. There were extensive preparations for the suit, but the patient died just before the suit came to trial. So this legal point is still pending."

Con

The Medical Bulletin then quotes from Dr. Holmes' "Autocrat of the Breakfast Table":

"If you are making choice of a physician, be sure you get one, if possible, with a cheerful and serene countenance. A physician is not—at least ought not to be—an executioner; and a sentence of death on his face is as bad as a warrant for execution signed by the Governor.

"As a general rule, no man has a right to tell another by word or look that he is going to die. It may be necessary in some extreme cases; but as a rule, it is the last extreme of impertinence which one human being can offer to another. 'You have killed me,' said a patient once to a physician who had rashly told him he was incurable. He ought to have lived six months but he was dead in six weeks.

"If we will only let Nature and the God of Nature alone, persons will commonly learn their condition as early as they ought to know it, and not be cheated out of their natural birthright of hope of recovery, which is intended to accompany sick people as long as life is comfortable, and is graciously replaced by the hope of heaven, or at least of rest, when life has become a burden which the bearer is ready to let fall."

DR. ALAN ROY DAFOE

In the death of Dr. Alan Roy DaFoe, the world has lost a character known and beloved by millions since that eventful day in May, 1934, when the Dionne quintuplets were born—and lived. Dr. DaFoe died June 2, 1943, in a hospital at North Bay, Ontario, in the country he loved. He was a typical country doctor who attained international prominence overnight. His name will be associated forever with the five little sisters

whom he attended at birth and nursed through their early years of life.

West Virginia doctors had the honor of having Dr. DaFoe as a guest at the annual meeting at Huntington in July, 1942. His friendly, charming manner endeared him to both doctors and laymen while he was in West Virginia. Although he was not then feeling absolutely fit, he did not spare himself at any time and was happy to stop and talk with crowds seeking a word with this famous doctor. His long years of self-sacrifice and devotion to the needs of the many people who depended upon him for medical care imbued him with those special qualities that attract the admiration and respect of all.

AMERICAN O. and G. BOARD MEETS

The annual meeting of the American Board of Obstetrics and Gynecology, Inc., was held at Pittsburgh, May 20-25, 1943 at which time 108 candidates were certified.

A number of changes in Board regulations and requirements were put into effect. Several of these changes are designed to broaden the requirements for candidates in service. Examples are the allowance of a stipulated amount of credit toward special training requirements for men in the military service and assigned to general surgical positions, special training allowances on a preceptorship basis for men assigned to obstetrical or gynecological duties in military hospitals and working under the supervision of diplomates or recognized obstetrician-gynecologists, as well as credit toward the "time in practice" requirement of the Board to be allowed for time in military service.

The Board will no longer require a general rotating internship, but will now accept a one year interne service, although the rotating internship is preferable. Such services must be in institutions approved by the Council on Medical Education and Hospitals of the A. M. A.

The privilege of reopening applications by candidates who have been declared ineligible has been extended to two years from the date of the filing of the application, instead of one year.

The Board has ruled temporarily to excuse men in military service from the submission of case records at the stipulated examination times, thereby permitting them to proceed without further delay with the Board examinations.

General News

NEW REGULATIONS FOR CONTROL OF CANCER AND TB APPROVED

Regulations governing the operation of the new Division of Cancer Control in the State Health Department were approved by the Public Health Council at a two-day meeting held in Charleston, June 16-17, devoted exclusively to consideration of matters concerning the treatment, control, and cure of cancer and tuberculosis. The following members were present: Dr. Walter E. Vest, Huntington, President; Dr. William R. Goff, Parkersburg; Dr. W. C. D. McCuskey, Wheeling; Dr. W. F. Bittinger, Summerlee; Dr. B. H. Swint, Charleston; Dr. N. H. Baker, (D. D. S.), Charleston; and, Dr. C. F. McClintic, State Health Commissioner, Secretary, ex-officio.

Qualifications of Director

Standards governing the qualifications of the director, assistant director, and educational consultant of the new Cancer Division were set up by the Council in consultation with the Merit System Council, as required under the provisions of the Cancer Control Bill, passed at the 1943 session of the legislature.

Under the specifications approved, the director and assistant director must be qualified to practice medicine in the State of West Virginia in accordance with the state medical practice act. In addition, the director must have had at least two years' postgraduate training, one devoted to the treatment and cure of cancer, and the other to pathology, or two years' work in the field of cancer. It was also specified that the director must acquire a degree in public health within the period of three years after his appointment.

The qualifications set up for the assistant director are practically the same, with the exception that he is required to have but one year's experience in cancer work.

Educational Program

The qualifications of the educational consultant will be similar to those of other public health educational consultants, except that he or she must have given particular attention to the problem of cancer.

The educational consultant will be available for addresses before service clubs and other public

organizations interested in health education and particularly in problems concerning cancer.

The educational phase of the program is to be conducted under the same policies that now guide the State Health Department in administrating cooperative public health programs with other state and national organizations which are interested in special branches or phases of public health education. This means that the new division will be tied in with the West Virginia Chapter of the Woman's Field Army of the American Society for the Control of Cancer. The program will be formulated so as to meet the needs of various interested groups, and will be carried on through county health agencies in the same way that public health educational projects are conducted at the present time.

For the benefit of the medical profession, it is planned to bring into the state for addresses before local, area and regional medical societies specialists who have met with success in the treatment, control and cure of cancer.

Cancer Clinics

It is planned to conduct a survey without delay to determine what clinics already exist in the state which are properly manned and equipped to carry on the work incident to the diagnosis and treatment of cancer. Approval will be given to clinics upon the advice and counsel of the Cancer Control Committee of the West Virginia State Medical Association.

Diagnosis, Treatment and Cure

In determining whether or not a patient is eligible for treatment or care under the act, it was decided that such eligibility is to be judged by the same standards of need now used by the Department of Public Assistance.

It is not known just how much of the annual appropriation of $50,000 will be available for diagnosis and treatment. Inasmuch as the appropriation is small, full service cannot be expected at the beginning of the program, unless the DPA continues to provide partial funds for the work. The same fee schedules will be adopted as now paid by the Department of Public Assistance for similar services.

The appropriation is available July 1, and the Commissioner of Health is taking steps to set up the new division under a competent staff as soon as possible after that date. Salaries will be the same as paid for similar positions under the merit system.

Hospitalization of Needy Tubercular

The Public Health Council authorized the State Health Department to request the Department of Public Assistance to make an investigation of all persons who are now in state sanatoria, payment for whom at the rate of one dollar per day is being made by county courts or the DPA, for the purpose of ascertaining whether or not all such persons are really needy and entitled to payment for treatment. The DPA will be requested to file a full report covering this matter with the State Health Department within the next sixty days.

It was brought out in the meeting that the population of state tuberculosis sanatoria at the present time is 901. After July 1, the state will be required to expend one dollar per day per person for the continued treatment of the needy at these various institutions.

As the appropriation under the budget bill for hospitalization of the needy tubercular is but $360,000 per annum, and as administrative costs will of necessity amount to approximately five per cent of the total, it is doubtful if the State Health Department can authorize the Board of Control to admit any additional patients to be paid for by the DPA out of this fund until a large number of those now taking treatment are discharged, or arrangements are made from some other source to pay for their care. Under the provisions of the budget bill, the appropriation is to be expended at the direction of the Public Health Council.

Chest Surgery at Pinecrest

A resolution was adopted by the Council bringing to the attention of the Board of Control the fact that Pinecrest Sanitarium is inadequately equipped for chest surgery, and the recommendation was made that the same be so equipped without delay. It is thought that if proper chest surgery were made available, many beds could be vacated soon and patients made ambulatory, thus providing more room for strictly bed patients.

Admittance to State Sanatoria

Under the regulations adopted, in the event a case of tuberculosis is brought to the attention of the family physician or any other physician in the state, which in his judgment should be hospitalized and which he deems to be a needy case, the doctor is to report the matter to the local health officer, who will then be required to make a confirmatory diagnosis. The case will be investigated by a DPA field visitor, a representative of the West Virginia

Tuberculosis and Health Association, and three citizens of recognized standing in the community.

Applications are to be reviewed and final approval given by an advisory committee consisting of three physicians who are specialists in the field of tuberculosis, and who are members of the West Virginia State Medical Association, together with a lay representative of the West Virginia Tuberculosis and Health Association. Every means possible will be taken to speed final decision in each case.

Emergency Cases

Unless it is an emergency case, the request for hospitalization will be referred to the State Health Department for review. Emergency cases may be sent without delay to any one of the state sanatoria.

Private and County Sanatoria Approved

The following private and county tuberculosis sanatoria were approved: Hillcrest, Charleston; Eastmont, Morgantown; Grandview, Moundsville; and Ohio County Sanatorium, Wheeling.

AUXILIARY MEMBERS AT CHICAGO

At the annual meeting of the Woman's Auxiliary to the American Medical Association, held at Chicago, June 7, the following members from West Virginia were registered: Mrs. John P. Helmick, of Fairmont, President of the Woman's Auxiliary to the West Virginia State Medical Association; Mrs. V. E. Holcombe, Past President of the Woman's Auxiliary to the A. M. A., and Mrs. U. G. McClure, of Charleston; and, Mrs. E. N. Dupuy, of Beckley.

AVIATION MEDICAL EXAMINERS

Graduation exercises were held recently at the School of Aviation Medicine in Texas and at the three army air forces classification centers for another class of aviation medical examiners. According to the *Journal of the American Medical Association*, the following West Virginia doctors were members of the graduating class: Lt. Emory H. Main, of Philippi; Lt. Charles R. Morris, of Wheeling; Lt. John F. Stecker, of Morgantown; Capt. Carlisle B. Hughes, Jr., Minden, and Lt. Joseph S. McDede, of Winona.

1942 SALE OF CHRISTMAS SEALS

The sum of $69,938.25 was realized from the sale of Christmas Seals in West Virginia in 1942, according to the annual report of the West Virginia Tuberculosis and Health Association.

DR. KRETSCHMER PRESIDENT ELECT OF AMERICAN MEDICAL ASSOCIATION

The House of Delegates of the American Medical Association met at the Palmer House, Chicago, June 7, 8 and 9. The Board of Trustees, acting under authority granted by the House of Delegates at the Atlantic City session in 1942, had voted to cancel the annual session scheduled to be held in San Francisco this year. Such action was deemed imperative owing to the war effort and the resultant limited transportation facilities. No meeting of the Scientific Assembly was held, but there was one general meeting on the evening of June 8, at which the President-Elect, Dr. James E. Paullin, of Atlanta, was installed as President.

The membership of the constituent state and territorial associations as of April 1, 1943, was reported as 122,741, an increase of 2,040 over the preceding year. The gross income from all sources for the year 1942 amounted to $1,975,236.30, with expenditures amounting to $1,644,820.96, leaving a net income of $330,415.34. The largest single item of income was from the sale of advertising space in the *Journal*, which amounted to $1,036,571.29.

The proposed amendment to the constitution depriving the delegates from the sections of the Scientific Assembly the right to vote was the subject of much discussion, but on the final vote was defeated without a dissenting vote. In the reapportionment of delegates, Kentucky, North Carolina and South Carolina each lost a delegate, and Connecticut, Ohio and New York gained one each.

The highlight of the meeting was the discussion of the proposal to establish an office in Washington. After much argument pro and con, the establishment of a Council on Medical Service and Public Relations was approved. The functions of this body are very broad, covering the entire field encompassed in the name. This council may claim the services of any of the present bureaus in the Headquarters Office, but does not absorb any of them. The elected members of this council are to be distributed over the United States geographically.

The Distinguished Service Medal was awarded to Dr. Elliott P. Joslin, of Boston, for his outstanding work on diabetes. Other nominees were Drs. A. J. Carlson and Torald Sollman.

The following officers were elected for the ensuing year: President-Elect, Herman L. Kretschmer, Chicago; Vice President, John W. Amesse, Den-

ver; Secretary, Olin West, Chicago; Treasurer, Josiah J. Moore, Chicago; Speaker House of Delegates, Harrison H. Shoulders, Nashville; Vice Speaker, Roy W. Fouts, Omaha; Trustees, Wm. F. Braasch, Rochester, Minn., and Ernest E. Irons, Chicago; Member Judicial Council, John H. O'Shea, Spokane, Washington; Member Council on Scientific Assembly, Edward L. Bortz, Philadelphia; and, Member Council on Medical Education and Hospitals, Russell L. Haden, Cleveland.

West Virginians in attendance were Drs. James R. Bloss, Ivan Fawcett, Cole D. Genge, John P. Helmick, and Walter E. Vest, and Mr. Charles Lively, Executive Secretary of the West Virginia State Medical Association.

SOUTHERN MEDICAL AT CINCINNATI

The Executive Committee of the Council of the Southern Medical Association, at a meeting held in New Orleans, May 27, decided to hold the next annual meeting of the Association in Cincinnati, November 16-18, 1943. The Campbell-Kenton County Medical Society, of Covington, Kentucky, and the Cincinnati Academy of Medicine will be co-hosts. The headquarters hotel has not yet been decided upon. The program will be equally divided between civilian and military medicine. Dr. Harvey F. Garrison, of Jackson, Mississippi, is president. Dr. W. F. Wooten, of Hot Springs, Arkansas, the president-elect, will be inducted into office at the close of the meeting.

AMERICAN CONGRESS PHYSICAL THERAPY

The 22nd annual session of the American Congress of Physical Therapy will be held at the Palmer House, Chicago, September 8, 9, 10 and 11, 1943. The annual instruction course will be held from 8:00 to 10:30 A.M., and from 1:00 to 2:00 P. M. during the days of September 8, 9 and 10, and will include a round table discussion group from 9:00 to 10:30 A.M., Thursday, September 9. The scientific and clinical session will be given on the remaining portions of these days and evenings. All of these sessions will be open to the members of the regular medical profession and their qualified aids. For information concerning the instruction course and program of the convention proper, address the American Congress of Physical Therapy, 30 North Michigan Avenue, Chicago, Illinois.

SKEETER BEATERS AT WORK

The Japs have withdrawn or have been conquered on some of the islands in the vast expanses of the South Pacific, but the disease-axis which makes a bastian out of these "tropical paradises" stubbornly hems in our jungle fighters. The battle with disease is incessant. There are no breathers between engagements and the continuous, pitched battle against a numerically large foe cannot be decisively won, but must be held at bay.

Fighting side by side with the Marines in their unrelenting battle against the Japs is an unsung detachment whose weapons are chemicals, drugs, and sanitation. This unacclaimed, yet vitally important unit, is known as the "Skeeter Beaters" or Anti-Malaria Brigade.

Enemies of this ingenius disease-eradication force are numbered in the billions — large waves of mosquito marauders staging day and night infection attacks, which penetrated deep into our lines unopposed until organized malaria-control units began wiping them out by the millions. Now, these "Skeeter Beaters" are slowly conquering the greatest malaria problem since the building of the Panama Canal.

Two major types of strategy are employed—cure and prevention. Men contracting malaria, or suspected of having it, are given immediate tests and treatments. First signs of malaria are generally headaches, extreme fatigue, and fever or chills. Blood tests are often given to determine whether men showing symptoms are afflicted with this dread jungle disease.

Every known anti-malarial drug is used in treating the men, including atabrine which has proved successful in battle tests. Field treatment enables the men to continue in combat. Lingering cases of malaria are evacuated to battle-equipped base hospitals.

To carry out the strategy of prevention, the malaria unit wages an offensive war against the mosquitoes. Swamps and other breeding places are invaded and sprayed with a coating of oil. Millions of mosquitoes are killed in the larvæ stage—before they can have an opportunity to become carriers of the disease.

Every jungle fighter is also equipped with a mosquito net, a practical safeguard against the malaria-carrying enemy.

The battle against disease is not confined to the Marines. All of the fighting forces must meet and solve the problem. But because they are a swift,

mobile force and thus can carry only essential equipment, the problem for them is more acute. They have met and conquered their human enemies against tremendous odds, and the malaria unit, fighting with them, is endowed with the same spirit. It, too, is meeting and beating the enemy—malaria—on its own grounds.—Staff Sergeant Emil J. Blacky, USMC.

CHANGES IN LOCATION

Dr. L. P. Stanley, of Pine Grove, has moved to Charleston.

Dr. Tracy N. Spencer, Jr., formerly of Oak Hill, has located at South Charleston.

Dr. S. G. Moore, of Elkins, has located for the practice of his profession at Harper's Ferry. This eastern panhandle town has been without the services of a doctor since the death of Dr. C. C. Johnson, January 18, 1943.

Dr. Ernest L. Yost, of Fairmont, has accepted full-time employment with the Civil Service Commission, 12th Region, and is now located at Sacramento, California.

Dr. J. T. Belgrade, who has been located at McKeesport, Pennsylvania, for the past few months, has returned to Wheeling.

CORRECTION

In the preparation of the biographical sketch of Dr. John C. Condry, printed in the June JOURNAL in connection with the paper, "Operative Wound Healing, Its Management, and an Evaluation of the Technic and Suture Material Employed," the data used was unfortunately incorrect in that it concerned Dr. R. J. Condry, of Elkins, his brother, who is now in active service with the United States Navy.

The following is the biographical sketch that should have been printed in connection with this article:

Dr. Condry, graduate University of Louisville School of Medicine, 1938; interned St. Marys Hospital, Cincinnati, Ohio; residency in surgery, Springfield City Hospital, Springfield, Ohio, and Charleston General Hospital, Charleston, West Virginia; Captain, M. C., A. U. S. Active service since August, 1942. Stationed at Camp Forrest, Tennessee.

DR. McKINLEY HEADS BUREAU

Dr. Charles Scott McKinley, of Scotch Plains, New Jersey, has accepted appointment as Director of the Bureau of Industrial Hygiene, State Health Department, to succeed Dr. John W. Crosson, who resigned to accept appointment as Industrial Consultant for Sharp & Dohme. Dr. McKinley's appointment was made upon the recommendation of the United States Public Health Service. Dr. Harry M. Brown, industrial physician at the DuPont plant, at Belle, is medical consultant for the Bureau.

AMERICAN COLLEGE OF RADIOLOGY

The annual meeting of the American College of Radiology was held at Chicago, Sunday, June 6. The meeting was streamlined to one day. Dr. Cole D. Genge, of Huntington, member of the College, attended the meeting.

COMMITTEE WILL STUDY BY-LAWS

Dr. R. J. Wilkinson, president of the West Virginia State Medical Association, has named a special committee to submit a report to the Council on the revision of the constitution and by-laws. The committee is composed of Dr. J. Howard Anderson, of Hemphill, chairman; and Drs. F. C. Hodges, of Huntington, and James L. Wade, of Parkersburg.

NURSING REPRESENTATIVE APPOINTED

Miss May M. Maloney, of Charleston, Executive Secretary of the West Virginia State Nurses' Association, has been appointed by Dr. R. K. Buford, State Chairman, as nursing representative on the State Procurement and Assignment Committee.

AMERICAN ACADEMY OF TB PHYSICIANS

Dr. David Salkin, Superintendent of Hopemont Sanitarium, was one of the speakers at the annual meeting of the American Academy of Tuberculosis Physicians, held in Chicago, June 9-10. His subject was, "Treatment of Tuberculous Bronchitis."

A Rose by Any Other Name—

"I have a pain in my abdomen," the recruit told the Army doctor.

"Young man," the doctor replied, "officers have abdomens. Sergeants have stomachs. You have a bellyache."—*The Pathfinder.*

WITH DOCTORS IN THE SERVICE

At Home

Major Paul H. Revercomb, of Charleston, is now Chief of Medical Service at the 246th Station Hospital, temporarily attached to Camp Sutton, North Carolina.

* * * *

Capt. Herman L. Hegner, of Wellsburg, who has been with the 7th Armored Division at Camp Polk, La., and who is at present on maneuvers in a medical detachment of the 48th Armored Infantry Regiment, writes that "it has been rather interesting to hear of all the rain and cold weather back in West Virginia, when here we have been sweltering in temperatures as high as 158° The extremely low humidity in the California desert makes it possible to endure high temperatures."

* * * *

Lt. I. E. Buff, of Charleston, is now stationed at Palm Springs, Cal.

* * * *

Capt. Henry C. Davis, of Bluefield, has been transferred to the Station Hospital at Camp Hood, Texas.

* * * *

Capt. John W. Whitlock, of Amigo, is now attached to the 312th Med. Bn., 87th Inf. Div., at Camp McCain, Texas.

* * * *

Lt. Mendel W. Smith, formerly of Bluefield, is now connected with the 57th College Training Detachment, University of Alabama, at Tuscaloosa.

* * * *

Major Arnold Wilson, of Welch, who accepted a commission in the army several months before "Pearl Harbor," is still on fracture service at the Station Hospital at Fort Knox, Kentucky, having served as assistant chief and chief of this service. "The fractures," he says, "are very much like those in the coal mines, except more comminuted and compound, the most serious being sustained by motorcyle riders at high speed." He writes that he has worked with several doctors from Charleston, including Drs. R. N. O'Dell, Julius Boiarsky and Claud Smith, and further says that West Virginia is well represented among the nurses at the station hospital.

Capt. L. R. Dudney, of Layland, is now flight surgeon connected with the Station Hospital at MacDill Field, Tampa, Florida.

* * * *

Capt. Kenneth M. McPherson, of Beckley, who has been stationed at Camp Gordon, Georgia, is now attached to H. Q. 4th Engr. Bn., at Fort Dix, New Jersey.

* * * *

Capt. Julius L. Boiarsky, of Charleston, who has been attached to the Station Hospital, 1560th Service Unit, at Camp Atterbury, Indiana, has been transferred to Philadelphia.

* * * *

Capt. John F. Stecker, of Morgantown, attached to the A.A.F., is now stationed at Florence, South Carolina.

* * * *

Capt. T. B. Gordon, of New Martinsville, attached to Co. B, 103rd Bn., has been transferred from Camp Livingston, La., to Camp Gordon, at Johnston, Florida.

Abroad

Lt. H. C. Fleming, of Fairmont, is with the American forces in India.

* * * *

Major A. R. Lutz, of Parkersburg, and Lt. E. Norval Carter, of Huntington, are on duty "somewhere" overseas.

* * * *

Lt. Joseph M. Straughan, U.S.N., of Charleston, who recently completed his internship at the National Naval Medical Center, Bethesda, Maryland, has been assigned to overseas duty.

* * * *

Capt. James G. Ralston, of Clarksburg, who has been stationed in Louisiana for the past several months, is now on foreign duty.

* * * *

Lt. Comdr. William A. Thornhill, of Charleston, has been on overseas duty since December, 1941.

* * * *

Capt. Harold L. Noble, of Grafton, who has been overseas for several months, is now stationed with his unit in the South Pacific area.

THE WEST VIRGINIA MEDICAL JOURNAL

ATLAS BUILDING, CHARLESTON, W. VA.

The Committee on Publication is not responsible for the authenticity of opinion or statements made by authors or in communications submitted to this Journal for publication. The author or communicant shall be held entirely responsible.

WALTER E. VEST, M. D.
Editor
955 Fourth Ave.
Huntington, W. Va.

MR. CHARLES LIVELY
Business Manager
Atlas Building
Charleston, W. Va.

ASSOCIATE EDITORS:
EDWARD J. VAN LIERE, M. D.
Morgantown, W. Va.
W. M. SHEPPE, M. D.
Wheeling, W. Va.
G. G. IRWIN, M. D.
Charleston, W. Va.
J. C. HUTCHINSON, M. D.
Welch, W. Va.

JAMES R. BLOSS, M. D., Editor Emeritus, Huntington

ENTERED AS SECOND-CLASS MATTER, JANUARY 1, 1926, AT THE POST OFFICE AT CHARLESTON, WEST VIRGINIA

Vol. XXXIX August, 1943 No. 8

EPIDEMIC KERATOCONJUNCTIVITIS*

By F. V. GAMMAGE, M. D.
Bluefield, West Virginia

Among the maxims of the sage who many centuries ago wrote Ecclesiastes, is the cynical observation that there is no new thing under the sun. A new disease is indeed a rarity, for familiar diseases have a way of appearing in strange guises, especially in war time.

During the first World War, I visited a patient who was desperately ill. Her temperature was 104 F., and the whole room was spattered with blood because of the persistent epistaxis. I thought her's was a case of typhoid fever, but I quickly discovered from the deluge of cases which overwhelmed me almost at once, that the worldwide epidemic of a seemingly new disease then sweeping the country had reached my community. Later, it was recognized as influenza, ancient in origin and well-known.

Despite the numerous innovations of the present World War with its remarkable improvements in mass murder, its civilian bombings, commando raids and point rationing, the final reckoning will probably show that where bullets killed thousands, disease took its toll of millions. Already, well-known diseases of ancient origin are at work; typhus has decimated the Polish and Jewish peoples, pellagra has made great inroads on the Spanish population; deficiency diseases and starvation bid fair to wipe out the Greek nation, and malaria (not the Japanese) effected the defeat on the Bataan peninsula. As in other centuries these age-old enemies continue their conquest.

It is well-known that when a virgin population is subjected to an infection hitherto not experienced, the causative organism acquires new virulence. Glibly it is asserted that the sailors of Columbus introduced from the New World into the Old, a new disease

THE AUTHOR

Dr. Gammage, graduate Ohio State University Medical School; interned Good Samaritan Hospital, Cincinnati; Postgraduate Chicago E. E. N. T. Hospital, Western Reserve University; Bluefield Sanatorium Staff; Diplomate American Board of Otolaryngology.

*Read before the Mercer County Medical Society, Bluefield, West Virginia, April 22, 1943.

—syphilis. In all probability the true explanation is that they, immune themselves, spread among the natives a micro-organism new to the inhabitants of America. It soon became increasingly virulent in the fertile soil of a wholly unimmunized people, and when transferred back to the Old World in revitalized form, it produced the scourge that came to be known as syphilis.

The new diseases that emerge from the present world cataclysm may on close scrutiny have only the appearance of newness because of a somewhat different application of familiar principles. What diseases the Orient may transmit to the Occident through the channels of war is purely a matter of conjecture at present, but one not without challenge in both its new and old aspects.

"JAPANESE SORE EYES"

Recently my attention was directed in a particularly personal way to the advent of a so-called new disease of the eye, reputedly of truly sinister Oriental origin. Last fall my son-in-law, an employee of the Curtiss-Wright aeroplane plant at Columbus, Ohio, contracted a severe case of sore eye, for only one eye was involved. The nurse at the plant at once informed him that he had "the new Japanese sore eyes."

In response to my queries concerning the nature of this new disease and how it was affecting and would affect the patient, his oculist, Dr. Hugh C. Thompson of Columbus, informed me that his was a simple case of conjunctivitis. He added that none of the physicians in Columbus had heard of "a new Japanese eye disease."

Nevertheless, the condition of the eye grew steadily worse, and a severe keratitis supervened, incapacitating the patient for work in spite of almost daily office treatment by Dr. Thompson. I then requested literature from the library of the American Medical Association on "the new Japanese eye disease" and promptly received many articles on epidemic keratoconjunctivitis. From them I learned that there is indeed a disease of the eye, mistakenly designated "a new Japanese eye disease", however, that is playing havoc all over the United States, to say nothing of the entire world. The upshot of the case of my son-in-law was that the disease persisted for two months and there was a return of normal vision. Significantly, neither my daughter nor her baby got the disease.

In the literature I reviewed, Hogan and Crawford[1] presented the best exposition of epidemic keratoconjunctivitis, and most of my remarks are based on their observations. My personal experience with this disease is very limited as only a half-dozen cases have come under my care in Bluefield. This limited number is important for the board of health had sent out a warning of its prevalence here, and the fact that so few patients have reported to an oculist's office indicates, apparently, the mildness of the disease in the majority of the cases and the quick recovery of the patients. Also, in the cases I treated, there was an entire lack of complications.

MANY NAMES

Epidemic keratoconjunctivitis is not a new disease. It has been variously named superficial punctate keratitis (Fuchs), keratitis subepithelialis (Adler), keratitis maculosa (Reuss), nummular keratitis (Stellwag) and shipyard conjunctivitis (Sanders).[2] In August, 1889, Stellwag described a type of keratitis that followed a slight conjunctivitis in an article entitled, "A Peculiar Form of Corneal Inflammation." During the same month Reuss reported a series of similar cases. Apparently the disease was endemic in Austria at that time. Two months later Fuchs recorded 36 cases under the name of superficial punctate keratitis. Since then reports have come in from all over the world.

The first epidemic in the United States was reported in 1938 by Hobson[3] from the Veterans' Hospital, San Fernando, Calif. Holmes[4] recorded the occurrence of an epidemic of 10,000 cases on the island of Oahu, Hawaii, in the summer of 1941. In the fall

of that year the workers in the shipbuilding plants in Oregon were attacked. From there the disease spread all over the United States, especially among the employees of shipbuilding and airplane manufacturing plants.

SYMPTOMATOLOGY

At first there is simple uniocular conjunctivitis. The patient complains not of pain, but of a feeling of a foreign body in the eye, a symptom characteristic of an ordinary conjunctivitis. There may be itching and swelling as in an allergic condition of the eye. Within a few hours there is a glassy edema of the caruncle and semilunar fold spreading to the entire conjunctiva and producing chemosis. This is accompanied by swelling of the lids. Transient pseudomembranes may appear, but I saw none in my cases. Sanders[2] reported that in New York the disease appears typically as an acute follicular conjunctivitis with swollen and sometimes painful preauricular lymph nodes. This is the type that I saw mostly. The disease starts in one eye, the second eye becoming involved after a week. In the cases I observed, the involvement of the second eye was very mild. Intense hyperemia and watery discharge occur, but no pus is present although the lids stick together slightly in the mornings.

In three-fourths of the patients the preauricular, angular, submaxillary and cervical lymph nodes are enlarged early, but suppuration never occurs, however bad the inflammation may be. Early corneal changes on the first or second day are tiny punctate infiltrates of the epithelial-erosion type that take the fluorescein stain. These heal as the conjunctivitis heals. This initial corneal stippling is all that occurred in my cases. True keratitis characterized by maculas usually becomes evident about the eighth day, first in the eye more severely affected and later in the other eye in most cases. Hogan and Crawford[1] noted the presence of keratitis in 92 out of 125 cases. It was present in none of my cases.

The cornea is a complicated structure consisting of five layers: (1) superficial epithelium, (2) Bowman's membrane, (3) substantia propria, (4) Descemet's membrane and (5) posterior endothelium. Each layer has its peculiar diseases, and the deeper they penetrate, the worse their effect. This is also true in this disease. The maculas measure from 0.5 to 1.5 mm. in diameter and are usually located in the superficial substantia propria. In some cases they involve the deeper layers of the substantia propria, cause a wrinkling of Descemet's membrane and deposit precipitates on the posterior endothelium, which changes indicate that there is a still deeper involvement causing an iritis or iridocyclitis. The central portion of the cornea is most often involved; there is, however, no staining with fluorescein in this stage, and characteristic is the lack of ulceration and vascularization of these lesions. The corneal infiltrates outlast the acute conjunctival symptoms by a considerable period.

The picture is that of an ordinary fulminating conjunctivitis until the advent of the keratitis; thereafter it changes suddenly and completely. Sudden severe pain, photophobia, lacrimation and blepharospasm occur and continue until the keratitis heals. Healing may take place in from one to three weeks although cases have been reported in which the keratitis was present for as long as two years. The maculas heal from the periphery to the center, leaving only a shining silica-like circular lesion which impairs vision, but in the most severe cases reported the patient recovered vision up to 20/30 within three months. Constitutional symptoms may be slight malaise and fever.

DIFFERENTIAL DIAGNOSIS

Differential diagnosis of this disease requires particular consideration of inclusion conjunctivitis and Beal's acute follicular conjunctivitis.[6] Inclusion conjunctivitis is to trachoma what vaccinia is to variola. In inclusion conjunctivitis typical inclusion bodies can be demonstrated in the conjunctival scrapings, the enlargement of the regional lymph nodes is not great, and the sulfo-

namide compounds are specific. Epidemic keratoconjunctivitis is differentiated from Beal's disease by its greater severity, its corneal complications and the prolonged course.

The absence of pus is significant for it quickly differentiates the disease from acute epidemic conjunctivitis or pink eye. In the latter disease the most characteristic feature is the discharge of thick pus, which completely glues the eyelids together in the mornings.

The etiology is unknown. No organisms, not even occasional saprophytes such as Staphylococcus albus or diphtheroids, are found in the conjunctival scrapings in cases of epidemic keratoconjunctivitis. Nevertheless, since the disease is transmitted by the filtrate after it has passed through the Seitz and Berkefeld filters, it is logical to conclude and is generally agreed that it is a virus disease. Because of the similarity of this disease to inclusion conjunctivitis, there is the remote possibility that it may be a form of the latter and that basically the two may be of like nature.

MODE OF TRANSMISSION

Apparently keratoconjunctivitis is not contagious. Dr. Thompson in a letter to me stated that he had treated a number of patients with the disease, but in no instance had it occurred among members of the family of a patient. It seems that the workman gets it, but his family does not.

Thygeson and Stone[5] observed that in inclusion blennorrhea it seems highly probable that genito-urinary discharges are the source of contamination rather than ocular exudates. This is true of venereal lymphogranuloma and of gonorrheal ophthalmia. It is their belief that if the genito-urinary disease could be eliminated, the virus of inclusion blennorrhea would die out. In this respect the disease resembles gonorrheal ophthalmia, which, except in Egypt and certain parts of the Near East, spreads from eye to eye only under exceptional circumstances.

Ling[7] found inclusion bodies in the epithelial cells in 50 per cent of the cases of epidemic keratoconjunctivitis in his series. He did not attempt to correlate inclusion blennorrhea and epidemic keratoconjunctivitis; he merely stated that during the summer months when many persons were swimming in large pools, he encountered the two conditions. Their occurrence concomitantly is due, no doubt, to the common practice of urinating in swimming pools. Passage through the genital tract at birth infects the two eyes of an infant so that ordinarily both of a baby's eyes are infected in ophthalmia neonatorum. The opposite is true in the adult who becomes infected with gonorrheal conjunctivitis. He puts his finger in one eye and infects it; it becomes inflamed and is usually lost. At least, I have never known the other eye to become infected by contamination from the originally infected eye, which observation indicates that the infection is strictly of venereal origin and not an eye to eye infection. This source may explain the lack of virulence of contagion and also that only one eye, the first one infected by a venereally contaminated finger, no doubt stands the brunt of the inflammation in epidemic keratoconjunctivitis. In my small series of cases no member of the family of a patient contracted the disease.

Epidemic keratoconjunctivitis lasts from two weeks to two years. In all of my cases the disease was short-lived, lasting not more than two weeks. In the double phase, that of the conjunctivitis with the keratitis supervening, in the cases in which the conjunctivitis prevails, the disease clears up quickly. In the cases in which the second phase, keratitis, predominates, the duration is longer. In the former, vision is unimpaired; in the latter, there is some impairment, although not as much as might be expected in so severe a disease.

TREATMENT

The eye is perhaps the most delicate organ in the human body; therefore, it will not stand insult. Much harm can be done by overtreatment. It is wiser to use bland solutions

than strong, irritating ones. As in all unfamiliar conditions, every imaginable drug and therapeutic procedure have been tried. All the well-known ophthalmologic collyria and ointments have been used, including silver, bichloride, boric acid, zinc, mercurochrome and 2 per cent quinine bisulfate ointment. Roentgen therapy and the application of a 5 per cent solution of sulfathiazole sesquihydrate as well as a 5 per cent sulfathiazole ointment are among the many therapeutic aids advised. In this form of conjunctivitis, in contradistinction to most other forms, bandaging of the eye is beneficial, and resting the eyes is advisable. Iced compresses are particularly soothing at first.

My practice is to use a bland wash of boric acid or salt water with a little adrenalin, supplemented by the application of 5 per cent boric acid ointment at night, thus avoiding all strong medicines. In one case I used the sulfathiazole lotion and ointment, and in forty-eight hours the patient returned with both eyes swollen shut. The sulfathiazole was discontinued, and the next morning the swelling had subsided. I did not repeat this treatment. Some oculists advise little treatment, merely cleanliness and rest, in the belief that the disease is self-limited and will clear up of its own accord in several weeks. When, however, the keratitis is pronounced, this conclusion is not warranted for the disease may last one or more years. The usual treatment for keratitis, including atropine, heat and rest, is employed in treating the keratitis present in epidemic keratoconjunctivitis.

CONCLUSION

An uncommon disease of the eye, masquerading as new in some quarters, has made its appearance, especially among employees of war plants. It leaves in its trail millions of lost man hours and subjects thousands to the inconvenience of impaired vision, at least temporarily. This disease has been variously designated, but epidemic keratoconjunctivitis is the most fitting title. It expresses the trio of attributes that are characteristic: epidemic, which appropriately describes its wide spread; kerato for keratitis, the secondary phase of the disease, which, if in the ascendancy, delays the recovery for many weeks or months; and conjunctivitis the original disease entity in this syndrome.

The diagnosis is made by the following signs: uniocular conjunctivitis of a fulminating nature, with hyperemia, chemosis and glassiness of the conjunctiva, and swelling of the lids and the preauricular lymph glands. The condition grows steadily worse for the first few days. Keratitis appears early in the form of tiny superficial punctate corneal infiltrates of the epithelial-erosion type and is replaced about the eighth day by corneal maculas involving the substantia propria. The disease is not considered contagious and is usually self-limiting, lasting about two weeks. However, cases have been reported of as long as two years' duration. As a rule there is little or no impairment of vision.

REFERENCES

1. Hogan, M. J., and Crawford, J. W.: *Epidemic Keratoconjunctivitis*, Am. J. Ophth. 25:1059-1078 (September) 1942.

2. Sanders, Murray: *Epidemic Keratoconjunctivitis (Shipyard Conjunctivitis): 1. Isolation of a Virus*, Arch. Ophth. 28:581 (October) 1942.

3. Hobson, L. C.: *Acute Epidemic Superficial Punctate Keratitis*, Am. J. Ophth. 21:1153-1155 (October) 1938.

4. Holmes, W. J.: *Epidemic Infectious Conjunctivitis*, Hawaiian M. J., 1:11-12 (November) 1941.

5. Thygeson, Phillip, and Stone, Wm.: *Epidemiology of Inclusion Conjunctivitis*, Arch. Ophth. 27:91-119 (January) 1942.

6. Thygeson, Phillip: *Acute Follicular Conjunctivitis, Beal's Type*, Arch. Ophth. 13:853-854 (May) 1935.

7. Ling, W. P.: *Keratitis Punctata Superficialis and Swimming Pool Conjunctivitis*, Chinese M. J., 50:1381-1392, 1936.

National Foundation Grants

Twenty-eight grants, totaling $354,370, have been made by The National Foundation for Infantile Paralysis to universities, hospitals, laboratories and other organizations in eleven states to continue the fight against the disease. The grants were recommended by the Foundation's Medical Advisory Committees at its semi-annual meeting and have now been approved by the Board of Trustees.

DIAGNOSIS AND TREATMENT OF NASAL SINUS DISEASES IN RELATION TO THE EYE*

By HENRY M. GOODYEAR, M. D.
Cincinnati, Ohio

CORNEAL ulcers, unless traumatic in origin, always make one suspicious of a possible chronic infection of the maxillary sinuses and I would not be satisfied to consider a roentgenogram without first injecting iodized oil which will make it possible for one to read even a 1 to 2 mm. thickening of the sinus membrane. Should infection be found, I believe a large opening should be made under the inferior turbinate into the antrum immediately. If this opening is made properly it will remain large and permanent. No relief can be expected in chronic antrum infection unless the antrotomy is properly done.

Any infection along the uveal tract demands a careful examination of the nasal sinuses and teeth. An optic neuritis which responds to sinus treatment very often is noted first by the patient in the morning, the central blindness having developed in the night. These cases do not usually show any pus in the ethmoid cells or sphenoid, yet frequently the vision returns immediately after opening the posterior ethmoid cells or sphenoid. However, in the past ten years I have learned that the injection of iodized oil in the sphenoid will produce the same spectacular return of vision if these patients are to be helped at all by any manipulation in this area.

We still see infants treated for a dacryocystitis who really have a suppuration of the ethmoid cells. Very often the eye is closed by the swelling and the usual curved incision midway between the inner canthus and the midline of the nose will suffice to approach the periosteum which is usually already elevated by the pus beneath. It can be incised and the lateral wall of the ethmoid exposed. I am opposed to the attempt at removal of any bone at this time. Usually a cigarette drain is necessary and the suppuration rapidly subsides without destroying the ethmoid labyrinth or entering the nose. If the antrum is infected it may be entered through this same incision since in an infant the antrum does not extend much below the floor of the orbit.

An acute orbital cellulitis still offers controversy as to the proper time for surgical intervention. As long as the eye is mobile there is no great hurry about making the incision, but once the eye becomes fixed, drainage should be instituted at once.

In adults the usual curved orbital incision may be made and a drain inserted. If the acute infection does not subside rapidly or if drainage persists then it is well to exenterate the ethmoid cells and remove part of the lamina papyracea through the nose. In fact, I am using this approach in adults today for intraorbital abscesses. If the septum will permit entering the ethmoid labyrinth the cells are bitten away and the lamina papyracea which is already eroded is widely removed, thus permitting the abscess to drain through the nose. At the same time the antrum should be examined as infection of this cavity frequently accompanies the ethmoid infection.

THE AUTHOR

Dr. Goodyear, graduate Northwestern University School of Medicine; Assoc. Professor Otolaryngology, College of Medicine, University of Cincinnati; American Academy Ophthalmology and Otolaryngology; Fellow American College of Surgeons; Fellow American Otological Association.

*Presented before Section on E. E. N. T. at the annual luncheon meeting, May 17, 1943, at Charleston, West Virginia.

Very often the ophthalmologist is the first to see a patient with a mucocele of the ethmoid or frontal sinus because a swelling above the inner canthus is often accompanied by a displacement outward and downward of the eye.

For the past ten years I have refrained from operating upon any of these cases by the external route. Thus, the muscle is not disturbed and the approach through the nose is excellent. A submucous resection may be necessary, as may be the splitting and removing of the outer half of the middle turbinate; especially is this true should a cyst be present in this body. The ethmoid cells are then bitten away and the mucocele is readily entered followed by a free flow of material. No attempt should be made to curette the cavity as it is lined with smooth epithelium.

The displacement of the eye can be corrected by pressure with the finger in an inward and upward direction above the inner canthus as the cystic wall is very thin and easily broken back into normal position. The patient usually leaves the hospital within forty-eight hours and healing takes place leaving a large permanent opening lined with epithelium into the old mucocele cavity. There has been no recurrence in any of my cases.

IMPORTANCE OF SMALL DOSES

I feel that ophthalmologists in general do not appreciate the importance or the value of small doses (3 units) of insulin in treating corneal ulcer and other inflammatory lesions about the eye. The stimulating effect that is apparently produced by these small doses is surprising, and they may be given twice a day; usually, however, one dose per day is distinctly helpful.

Occasionally the ophthalmologist sees a young patient with acute and marked tenderness swelling of the eye following swimming. There is usually a history of a rise of temperature, often to 103 or 104 F., accompanied by chills and a rapid closing of the eye. X-ray will show a clouding of the ethmoid cells and frontal sinus. These findings represent an acute fulminating frontal sinus infection and the usual curved intra-orbital incision is indicated, followed by a small trephine opening in the floor of the frontal. This will relieve the pressure and afford drainage, which is all that is necessary. Great care should be taken to manipulate the tissues as little as possible and no attempt at manipulation should be made inside of the frontal sinus. If these patients are not treated early and if surgical drainage is not instituted, meningitis and acute osteomyelitis often result. Such acute cases do not come often in one's practice but when they do, rather courageous treatment is necessary.

PALLIATIVE TREATMENT

The ophthalmologist is often consulted by a patient complaining of pain about the eye and frontal region following an acute rhinitis. The pain is apt to be worse during the morning hours and is increased upon stooping and moving. Palliative treatment for such an acute frontal sinus infection is indicated and consists of keeping the nose open by means of a mild cocaine spray, as follows:

Cocaine hydrochloride grain 1½.
Solution neosynephrine ½%.
Saturated solution boric acid aa oz. ½.
Sig: Use in atomizer.

Advise the patient to spray only a small amount of the solution, then wait for five or ten minutes and spray again. This process should be continued until the nose opens well up toward the frontal region. Cold wet compresses over the face will often give these patients much more comfort than heat.

I am coming more and more to the conclusion that it is not necessary for patients with acute frontal sinus infection to suffer over a long period, especially where there is a history of repeated attacks or one attack each winter. If the infection is several days old I do not hesitate to cut away the anterior ethmoid cells and enter the frontal sinus with a Pratt ring curette, using care not to rasp the mucous membrane from the nasal frontal opening. Such a procedure gives almost

immediate relief and very often ends the recurrence of attacks. I shall cite a recent example:

A young man with a history of an acute cold of two weeks' duration but no history of previous sinus pain was referred to me by an ophthalmologist.

Roentgenograms showed a fluid level in the left frontal sinus and a clouding of the left ethmoid cells. The left antrum was clear. I saw the patient six days later at which time he said the frontal pain was very severe and there was some tenderness and apparently slight edema over the left frontal sinus.

TREATMENT

One per cent novocaine was injected into the orbit in the region of the anterior ethmoid nerve. Powdered cocaine with adrenalin was applied to the left nostril and by means of a biting forcep the anterior ethmoid cells were opened after pressing the middle turbinate medially. A finder was used to locate the frontal duct and this was entered by breaking the ethmoid cells in this area with a Pratt ring curette. There was a flow of mucopus from the frontal sinus.

The following day the patient reported that the headache subsided immediately after the operation and four days later he reported that he had not had one attack of severe pain since the operation. On examination the frontal duct was open and easily entered and the patient stated he had gone back to work.

I feel that this operation can be done simply and without great trauma. I have found it one of the most humane procedures I know, for there is no pain greater than that accompanying an acute frontal sinus infection.

PENICILLIN, AND OTHER MOLD DERIVATIVES*

By GORDON A. BERGY
Professor of Pharmacy, West Virginia University
Morgantown, West Virginia

No greater contribution to medical practice has ever been made than the introduction of the sulfonamide chemotherapeutic agents. There remain many fields uncovered, and failures unexplained. Now the mold extracts give evidence of supplementing these important new drugs.

Another series of substances obtained from mycologic experimentation, many of which show great promise, centers around the substance penicillin.

While only a few scientific papers have as yet been published in the medical and research literature, wide interest has been exhibited in this new group of mold derivatives. At present, in almost a dozen laboratories from coast to coast, workers are investigating the possibilities of the material. In scores of hospitals it is being tested clinically in conditions of actual practice. It is not yet commercially available, but as an agent intended to supplement the sulfonamide chemotherapeutic drugs, where the latter fail or are retarded in effectiveness, penicillin gives promise.

THE AUTHOR

Mr. Bergy, graduate College of Pharmacy, University of Michigan; Professor of Pharmacy, W. Va. University; American Chemical Society; American Pharmaceutical Association; Member Subcommittee External Preparations of the National Formulary.

Penicillin, another antibacterial agent, is produced by the mold penicillium. As with gramicidin, it possesses a strong antibacterial action. It was first discovered[1] by Fleming in 1929.[2] Others investigated it chemically[3] and finally Chain[4] and his colleagues in 1940 reported on the chemotherapeutic effect and the low toxicity of this new agent.

Penicillin is more active against the pyogenic cocci than against the gram-negative bacilli. It is extracted in solution by treating

*Presented before Monongalia County Medical Society, Morgantown, West Virginia, September 8, 1942.

the culture medium with organic solvents such as ether or amyl acetate at a pH of 2.0.

Penicillin is obtained from this concentrated extract either as the free acid by precipitating from petroleum ether, or as the ammonium salt by saturating a chloroform-benzol solution with dry ammonia gas. Yellow, thick, whetstone-shaped crystals of the acid are formed if the precipitation is slow. A dark yellow microcrystalline powder is formed when the ammonium salt method is used. Penicillin, when in solution as the free acid, is very rapidly inactivated. More stability is possessed by the ammonium salt. In the dry form both the free acid and the salt must be preserved in vacuo.

Penicillin is soluble in alcohol but insoluble in ether or chloroform. Acid reactions destroy it but in the form of neutral salts it is comparatively stable.[4] Acetylation or benzoylation of the ammonium salt in solution increases the stability. Fine needles of the free acids of the acyl derivatives are formed. The latter have almost the same in vitro activity as the original material.

Oxidation or evaporation at 40 to 45 C. inactivate penicillin. It is labile but resists heating at 60 to 90 C. for brief periods and 100 C. for five minutes but not for ten minutes.[5] It is not dialyzable through collodion membranes. Light which is rich in ultraviolet rays, oxygen, hydrogen and carbon dioxide, when bubbled through the culture medium, prevent the formation of or destroy penicillin. An enzyme extracted from E. coli destroys it without oxygen uptake.[6] There does not appear to be any relation between the presence or absence of an enzyme capable of destroying the penicillin in organisms and the susceptibility of such organisms to penicillin.

After analysis the formula best fitted to penicillin was determined as:

$$C_{14}H_{19}NO_6 \text{ or } C_{14}H_{17}NO_5 + H2O.$$

Some have expressed the belief that there is no nitrogen present. Penicillin is strongly dextrorotatory with an absorption maximum of 2750 A°.

The chemical in 1:800 dilution completely inhibits the growth of staphylococci. By adjusting the pH to 6.8, penicillin can be made to retain its potency for three months. This chemical is bactericidal to only a small extent but is very definitely bacteriostatic. Oxygen uptake by susceptible staphylococci is not prevented by the substance. Susceptible bacteria continue to elongate but do not divide, thereby showing enlarged and involute forms.[7]

Penicillin is not very toxic to animals. Serum or exudates do not hinder its action. Against localized and systemic infections it is capable of retaining its activity in vivo.

Meyer and colleagues[1] found that the substance they had extracted was inactive against E. coli, but required only a concentration of 1:32,000,000 to be effective against 2,000,000 to 3,000,000 hemolytic streptococci per cc.

The isolation of penicillin is more difficult than that of the other bactericidal substances. The cause for this is the great instability of the penicillin and the yellow pigments of similar chemical nature formed in the mold.

The Oxford standard which has been set for penicillin is 42 units per mg. In the United States 1 mg. is to contain 100 units. Fifty mg. or 5,000 units are equivalent to one dose. As produced in the United States, it is possible for from 40 to 60 gm. to be extracted from the 2,000 to 3,000 liters produced weekly.

Clinical study is being carried on at present in various hospitals throughout the nation.

HISTORY

In 1941 Abraham[8] and his colleagues isolated penicillin in a highly concentrated form, and made some further observations. Fleming, who was the first to describe penicillin in 1929, noted that the filtrate from the mold, before purification, prevented the growth of staphylococci and hemolytic streptococci. Streptococcus faecalis was resistant but other streptococci of the viridans group were inhibited.

Although the concentrated, purified penicillin is naturally more active than that in

the crude filtrate form, the relative selectivity for certain bacterial species varies very little. Heilman and Herrell[9] of the Mayo Clinic, in the last year compared the antibacterial activity of penicillin and gramicidin by means of tissue culture studies.

Both penicillin and gramicidin are effective against gram-positive bacteria and Neisseria. They are comparatively ineffective against all other gram-negative bacteria.

In their work the last named investigators employed a sample of penicillin which contained pyrogens and possessed a potency of 42 Oxford units per mg. Since that time, Florey and his colleagues have prepared a more concentrated substance which was determined to be six times more active.

PREPARATION

As stated previously the tissue culture method was used. The culture was made up of a drop of heparinized rabbit's plasma and 3 drops of an extract of chick embryos in rabbit's serum. The bacteria tested were in a broth culture which was so diluted that twenty or more colonies would grow in each culture. The culture was made and the antibacterial substance added immediately. A duplicate set of cultures was made and an explant of tissue from the mesenteric lymph node of the rabbit was added.

The tissue culture method has the advantage of showing the extent of activity of the substances in the presence of serum, plasma, tissue extract and living tissue. It can be used for various bacterial species. This method allows for comparison, is fairly uniform in results, and allows for reproduction of results at various times.

As a result of their studies Heilman and Herrell found that both penicillin and gramicidin, in very small quantities, inhibited the growth of Diplococcus pneumoniae and Streptococcus pyogenes. Only 5 micrograms per cc., or a concentration of 1:200,000, were required to inhibit all the strains of the two organisms tested. Florey and his colleagues reported that some strains of the Diplococcus were more resistant than others. That this was not verified in these experiments may be explained by the fact that only a small number of strains were tested.

ACTIVITY

Comparatively large quantities of gramicidin were necessary to decrease the number of colonies of Staphylococcus aureus, but even in large quantities it did not inhibit two strains. Penicillin was equally effective against S. aureus, D. pneumoniae and Str. pyogenes but ineffective against Str. faecalis. On the other hand, gramicidin was effective in inhibiting growth of the latter. Growing tissue and necrotizing tissue, when present in the culture, did not affect the activity of penicillin or gramicidin.

Further studies were made to determine whether the tissue cultures treated with varying quantities of penicillin or gramicidin, and showing no evidence of bacterial colonies after incubation for forty-eight hours, still contained viable organisms. These experiments were conducted by placing the cultures in tubes of dextrose brain broth, with 1 cc. of horse serum or rabbit serum added to those with the tissue cultures which contained D. pneumoniae and Str. pyogenes. They were then incubated for ten days at 37 C.

The subculture study showed that those tissue cultures which had received comparatively small amounts of the chemicals still contained viable bacteria. Certain strains of Streptococcus salivarius showed greater resistance to both substances than did the D. pneumoniae, Str. pyogenes or S. aureus. Except for certain strains of the Str. faecalis, penicillin appeared more effective than gramicidin. It was apparent that both penicillin and gramicidin act slowly on bacteria.

In order to determine whether either substance possessed an effect upon the other, both gramicidin and penicillin were added separately to the same tissue culture medium. Only a very slight complementary action was noted. To cause total inhibition, practically the full quantity of each must be added. From this last observation it would appear that their antibacterial activity is based upon

a different manner of attack rather than by identical methods.

The use of penicillin has been advised in dressings for septic wounds. Because it has so little toxicity, it is believed superior to those dressings which are made with active chemicals.[10 11] The drawback to therapy with penicillin is its loss of activity within a few weeks' time. It is not related chemically to the chemotherapeutic drugs now known. Its action is not prevented by pus and tissue constituents.[4 6]

CITRININ

Citrinin has been isolated from Penicillium citrinum from which it derives its name. Penicillic acid, a different entity from penicillin, was first found in Penicillium puberulum or "moldy maize." It is now available in larger quantities from Penicillium cyclopium. By comparatively simple processes of extraction and purification it is possible to obtain 2 gm. per liter of this material. In tests in vitro against bacteria, both of these substances have been proved to possess less activity than penicillin. However, some of the actions shown by them may prove of therapeutic value. Penicillic acid inhibits the growth of gram-negative intestinal bacteria, whereas citrinin acts almost exclusively on gram-positive organisms. A great deal of experimental work must be conducted on these substances before they can be used. Should they be found of therapeutic value they will possess the advantage over penicillin of being much more simply and abundantly produced.

Some strains of the Actinomycetes are capable of producing substances with antibacterial properties. There are three types of active substances which they produce: (1) actinomycetin, (2) lysozyme, and (3) actinomycin. It was first shown that the principle isolated from the Actinomycetes possessed different properties. Later it was found that these properties were the result of various fractions or principles. Actinomycetin is believed to be an enzyme which is water-soluble,[12 13 14 15] and probably acts against dead bacteria by digestion; living bacteria have also been found to be attacked.[16] Mild antiseptics do not destroy it but it is inactivated by ultraviolet rays and strong acids. It is thermolabile and is precipitated by alcohol, acetone and ammonium sulfate.[17] It is believed that different Actinomycetes produce principles with varying properties, as some workers have found that the factor from Actinomycetes, antagonistic to B. mycoides, is thermostable. It is insoluble in ether, petroleum ether, benzol and chloroform and soluble in water.

Actinomycin has been isolated from the Actinomyces antibioticus into two crystalline fractions, the first being actinomycin A, a bright red product, giving a clear solution in water.[18 19] It is insoluble in petroleum ether but soluble in ether and alcohol. It gives a yellow solution even in concentrations of 1 mg. per mil. It is slowly bactericidal but is highly bacteriostatic. It can be produced in liquid, solid, organic and inorganic media and is absorbed and removed by charcoal. Heat does not affect it and passage through a Seitz filter removes only a portion of it.

The second factor, or actinomycin B, is soluble in ether and petroleum ether, soluble with difficulty in alcohol and gives a turbid suspension in water. It is actively bactericidal and mildly bacteriostatic.[20]

PYOCYANASE

Extracts from Pseudomonas pyocyanea, known as pyocyanase, have been shown for some time to possess antibacterial activity. This activity was at first believed to be due to a bacteriolytic enzyme, but this theory has been refuted. Chloroform extracts from old cultures have shown that there are three substances present: (1) pyocyanine, a pigment, (2) a-oxyphenazine and (3) an oil which may be pyocyanic acid,[21 22] as the latter forms insoluble salts with barium, calcium and heavy metals. The pyocyanine acts by inhibiting the enzyme sussino-dehydrogenase and by interference with the respiration of brain tissues. It is very toxic.[23]

It has been shown[24] that the activity of

pyocyanase varies with the nature of the strain, the medium, and the extraction method employed. The most favorable medium is one which contains glycerol. Considerable disagreement has resulted as to its therapeutic value. It has been employed with blood or other animal tissues to protect rabbits against anthrax.

Pyocyanase acts upon various bacteria among which are included E. coli, and E. typhosa, but not Proteus vulgaris. At first it was thought to be an enzyme belonging to the class of nucleases.[25] In low concentrations it exerted a marked destructive effect upon diphtheria, cholera, typhoid and plague organisms as well as on pyogenic streptococci and staphylococci. It also rendered bacterial toxins inactive in a few seconds. It is now believed that pyocyanase is a phosphatide with a neutral fat and a free fatty acid. The pigment pyocyanin possesses lytic properties.[26] A 1:1,000 dilution was shown to be capable of lysing E. coli in six hours. It has been stated that pyocyanin acts only on gram-positive bacteria[24] and was found to be most effective in young cultures, while pyocyanase was found to be most effective in old cultures.[27] Pyocyanin, as has been stated, influences bacterial respiration.[28]

GLIOTOXIN

Gliotoxin,[29 30] another antibacterial substance, has been isolated from species of Trichoderma and Gliocladium. It is extracted from the culture with chloroform, which is then distilled off. The residue is dissolved in a small quantity of hot benzene or 95 per cent alcohol. Upon cooling, the material crystallizes out in silky, white needles. By analysis it has been found to have a formula of $C_{14}H_{16}N_2S_2O_4$ and a molecular weight of 347. It is stable in acid medium, but not in alkaline. Rhizoctonia hyphae have been inhibited in their growth by a dilution of gliotoxin of 1:3,000,000. The crude material and the purified material are toxic to Trichoderma in a minimum dose forty times that for the former. Gliotoxin is but sparingly soluble in water.

REFERENCES

1. Meyer, K.; Chaffee, E.; Hobby, G. L.; Dawson, M. H.; Schwenk, E., and Fleischer, G., Science, 96:20, 2479, 1942.
2. Fleming, A., Brit. J. Exper. Path., 10:226, 1929.
3. Clutterbuck, P. W.; Lovell, R., and Raistrick, H., Biochem. J., 26:1907, 1932.
4. Chain, E.; Florey, H. W.; Gardner, A. D.; Heatley, N. G.; Jennings, M. A.; Orr-Ewing, J., and Sanders, A. G., Lancet, 2:226, 1940.
5. Reid, R. D., 1935, through Waksman, S. A., Soil Sc., 43-51, 1937.
6. Abraham, E. P., and Chain, E., Nature, 146: 837, 1940.
7. Gardner, A. D., Nature, 146:837, 1940.
8. Abraham, E. P.; Chain, E.; Fletcher, C. M.; Gardner, A. D.; Heatley, N. G.; Jennings, M. A., and Florey, H. W., Lancet, 2:177, 1941.
9. Bornstein, S., J. Bact., 39:383, 1940.
10. Fleming, A., Brit. Exper. Path., 10:226, 1929.
11. Fleming, A., J. Path. & Bact., 35:831, 1932.
12. Gratia, A., and Rhodes, B., Compt. rend. Soc. de biol., 90:640; 1924-26.
13. Gratia, A., and Rhodes, B., Compt. rend. Soc. de biol., 95:734, 1924-26.
14. Welsch, M., et al., Compt. rend. Soc. de biol., 123:1013; 124:573, 1240; 125:1053; 126:244, 1254; 127:347; 128:795, 1172; 130:104, 797.
15. Welsch, M., Third Intern. Cong. Microbiol., 260, 1939.
16. Gratia, A., Bull. Acad. roy. de med. de Belgique, 14:285, 1934.
17. Borodulina, J. A., 1935, through Waksman, S. A., Soil Sc., 43:51, 1937.
18. Waksman, S. A., and Woodruff, H. B., J. Bact., 40:581, 1940.
19. Waksman, S. A., and Woodruff, H. B., Proc. Soc. Exper. Biol. & Med., 45:609, 1940.
20. Waksman, S. A., and Woodruff, H. B., J. Bact., 42:230, 1941.
21. Hettche, H. O., Klin. Wchnschr., 12:1804, 1933.
22. Schoental, R., Brit. Exper. Path., 22:137, 1941.
23. Keilin, D., and Hartree, E. F., Proc. Roy. Soc. Med., London, B. 129:277, 1940.
24. Kramer, H., Ztschr. f. Immunitatsforsch. u. exper. Therap., 84:505, 1935
25. Emmerich, R., Zentralbl. f. Bakt., I. 31:585, 1902.
26. Gundel, U. Hinstedt., 1923, through Nakhimovskaia, M. I., Microbiologia 7:238, 1938; 8:1014, 1939.
27. Hettche, H. O., et al., Arch. f. Hyg., 107:337, 1932; 117:234, 1937.
28. Ehrismann, O., Zentralbl. f. Bakt., 112:285, 1934.
29. Weindling, R., and Emerson, O. H., Phytopathology, 26:1068, 1936.
30. Weindling, R., and Emerson, O. H., Phytopathology, 27:1175, 1937.

Finest Physical Specimens

American soldiers, sailors, and marines are the finest physical specimens of military men in the world. The average American soldier is 5 feet, 8 inches tall and weighs 152 pounds; during the World War he averaged 142 pounds and during the Civil War only 136 pounds.—*Digest of Treatment.*

ABDOMINAL PREGNANCY

(Report of a Case)

By A. P. HUDGINS, M. D.
Charleston, West Virginia

When a fertilized ovum undergoes nidation outside of the uterine cavity the pregnancy is called ectopic or extra-uterine. It is considered normal for the sperm to meet the ovum in the ampulla of the tube but growth does not normally take place there. The fertilized ovum should migrate to the uterine cavity and become implanted for growth. If it stops anywhere along the pathway or if the sperm meets the ovum distal to this portion of the tube and migration does not take place, various types of ectopic pregnancy result.

The accompanying diagram shows where the fertilized ovum may become implanted. The abdominal location is not mentioned in this outline.

An abdominal pregnancy may be primary or secondary, depending on whether or not the fertilized ovum becomes implanted first in the abdominal cavity or in another area, for example, the isthmus of the tube, and reimplanted in the peritoneal cavity after expulsion from the first site by rupture or other cause. The secondary type is considered the more frequent. The majority of the cases of ectopic pregnancy occur between the ages of twenty-four and thirty-three.

FREQUENCY

The frequency of ectopic pregnancy varies according to the methods used to determine its presence. Schumann reported 1 in 300 cases, the University of Chicago 1 in 303 cases, Jefferson Hospital 83 in 3,747 ward cases or 2.24 per cent. Mastingly and Menville reported 10 cases or 0.04 per cent in a series of 25,000 deliveries at the Chondy Hospital in New Orleans; Noble observed ectopic pregnancy in from 3 to 4 per cent of his laparotomies. It is unquestionably true as will be shown in the following case report, that ectopic pregnancy is sometimes diagnosed as pelvic inflammatory disease when the tube ruptures, if the frank picture of shock and intra-abdominal hemorrhage is not obvious, since no further check is made if the fertilized ovum fails to become reimplanted.

THE AUTHOR

Dr. Hudgins, graduate Medical College of Virginia; interned Sheltering Arms Hospital, Richmond; resident, New York Cancer Institute; Postgraduate work, Bellevue Hospital, N. Y. C., Post Graduate Hospital, N. Y. C.; Obstetrics, Chicago Lying In Hospital.

ETIOLOGY

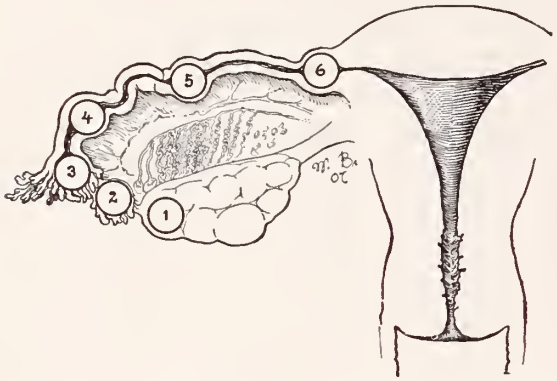
The experimental work of Mandl seems to show that simple obstruction is not enough to produce ectopic growth. In animals it proved to be difficult to force the ovum to develop in a normal tube. The accepted causes of ectopic pregnancy may be summarized as follows:

1. Obstructed pathway:
   a. Torsion by external means such as adhesions or tumor growths.
   b. Inflammation of mucosa thus destroying cilia or causing pocket formation.
   c. Congenital defects.
   d. Tube spasm.
2. Functional factors favoring alien attachment:
   a. Premature development of eroding function of the trophoblast, for instance, when ovum from right ovary crosses pelvis to left tube.
   b. Abnormal decidual growth in fallopian tubes.

The uterus becomes enlarged as a result of hyperemia that sets in as soon as concep-

tion occurs. The fate of the decidua varies with the life of the pregnancy. Usually, it remains intact until about the eighth or twelfth week or until the fetus dies, after which it is cast off, either in fragments or, less commonly, in one piece.

Abdominal pregnancies are very rare. Few ectopic pregnancies escape recognition and



Various sites of implantation of the ovum in extra-uterine pregnancy. 1, ovarian pregnancy; 2, implantation upon the tubo-ovarian fimbriae; 3, implantation within the fimbriated extremity of the tube; 4, attachment of the ovum in the ampulla; 5, isthmial attachment; 6, interstitial implantation. (Kelly, "Medical Gynecology," D. Appleton & Co., Publishers.)

treatment before or at the time of rupture. Future growth depends on reimplantation and a continued adequate blood supply from an unnatural source. The placental attachment is usually low in the abdomen, over the surface of the tubes and the surrounding structures. The exceptional case of placental attachment high up in the abdominal cavity may be explained as broad ligament pregnancies with displacement of the placenta upward during the development of the fetus and preceding secondary rupture.

Unrecognized, abdominal pregnancy may go to term, fail to go into the normal picture of labor and thus receive additional study. If the condition goes past term unrecognized, the fetus may die and later, by infiltration of lime salts, be converted into a lithopedion. In even rarer instances, by some peculiar chemical process, the fetal tissues are replaced by a thick, greasy, soapy substance known as adipocere. The other possible terminations are mummification, suppuration, calcification or fatty degeneration. However, as a rule, abdominal pregnancies are terminated long before term. The fetus, placenta and sac, and the blood clots, may lie in the peritoneal cavity and give rise to an inflammatory reaction which leads to encapsulation and the formation of a pelvic or abdominal mass.

SYMPTOMS

Ectopic pregnancy is most often associated with congenital abnormalities or inflammation of the pelvic organs. Evidence of these, obtained by history or physical findings, may be helpful.

Typical signs and symptoms of pregnancy —delayed menses, with nausea, vomiting, and breast signs appearing in six to eight weeks after last period, with pelvic pain and irregular spotting, should lead one to suspect ectopic pregnancy. When sudden pain, shock and pallor are present, rupture of the sac or tube may be ruled out. The symptoms may be mild and may subside, or perhaps continue, with evidence of pelvic or peritoneal irritation, a mass in the adnexa or the cul-de-sac, and mild or moderate anemia.

When reimplantation takes place, the subjective and objective symptoms of pregnancy continue and increase, perhaps up to term or termination of the fetal growth. There are marked abdominal tenderness and pain, gastro-intestinal symptoms, bladder disturbances, loss of strength, invalidism, prominence of fetal parts, and movements. The smaller fetal parts are easily palpable and the movements are very annoying to the patient.

DIAGNOSIS

With a history of menstrual disturbance and abdominal discomfort, the finding of a recent, moderately tender mass, and the uterus usually smaller than the suspected size of gestation, ectopic pregnancy should be considered and ruled out, or proven. The Aschheim-Zondek or Friedman tests are of great help. The simplified and rapid tests for pregnancy — Aschheim (vaginal smears), Weisman, et al (frog), Falks, et al (skin test), Salmon, et al (six hour rat test), may be helpful in early diagnosis of ectopic

pregnancy. The frog test has been reported to be more accurate in some cases. The injection of an opaque medium into the uterus will also be very helpful.

If the pregnancy has progressed to the fourteenth week x-ray will be of value; also, as labor progresses the detection of the uterus below the fetus, by palpation. Ware and Winn stress the importance of a detailed, careful history, especially in regard to menstrual irregularities, and the use of sedimentation rate to rule out inflammation.

Stein advises the use of gynecographic aid in the diagnosis of ectopic pregnancy. This method is a combination hysterosalpingography and pneumoroentgenography.

Mattingly and Melville reported no abortions following the use of hysterograms in gravid uteri. A detailed description of technique in x-ray procedures was given by these authors.

Extra-uterine pregnancy is always fraught with danger. Few cases go beyond the first two or three months. If the condition is unrecognized, early surgical intervention should compare favorably with an uncomplicated laparotomy. After rupture of the tube or sac, hemorrhage and infection must be considered.

The operation for advanced secondary abdominal pregnancy is often one of the most hazardous in pelvic surgery. Beck places the mortality at 35.8 per cent.

Fetal death may occur at any period of gestation. Frequently, signs of toxemia and fever occur in this event.

TREATMENT

Nearly every ectopic pregnancy requires operative treatment. If there has been "tubular abortion" without further symptoms of distress, careful observation may be sufficient.

If the diagnosis of extra-uterine pregnancy is established early, conservative surgery is indicated. If, however, the condition is an emergency, as in ruptured ectopic pregnancy, it must be relieved at once.

The only exception to immediate surgical intervention in a case of ectopic pregnancy is when the gestation has proceeded to the fifth month. In this case, when there is a possibility of viable fetus, the patient should be placed under strict observation and her condition carefully explained to her and to other responsible members of the family so that certain symptoms will be heeded promptly. More frequent ante partum examinations should be included in this plan also.

Beck's statistics indicate that the most favorable time for baby and mother is the thirty-eighth week. Allowing an abdominal pregnancy to continue to possible viability is a responsibility which should be borne only after full knowledge and consent of the family have been obtained as well as competent consultations. Generally speaking, if the child is alive and the pregnancy is near term, immediate operation is advisable for the safety of the mother. If the child is a monster and not viable regardless of term of gestation, the best interests of the mother are served by early operation in order to minimize the continued danger of hemorrhage or other serious complications.

DELIVERY

The delivery of the child is accomplished easily after the abdomen is opened. The great problem is the placenta. If the placental attachment is poor it may be removed, provided the hazard of hemorrhage is not obvious. However, as a rule, no attempt should be made to remove the placenta. The cord should be tied short and dropped into the peritoneal cavity. Careful inspection should be made for bleeders about the placental site and these should be ligated. It is usually wise to close the abdominal cavity without drainage.

The placenta, when left in, is usually absorbed, or becomes detached after a few months. The possibility of intestinal obstruction or intra-abdominal hemorrhage as a postpartum complication must be borne in mind. The intestinal complications are to be especially considered when placental implantation involves the alimentary tract.

Marsupialization and packing of the sac

was considered the method of choice in treating the abdominal placenta and sac in former years. This method has been abandoned due to the complications, chief among which is infection.

In abdominal pregnancies, when the fetus dies near term, Anspack advises that the operation be deferred from six to eight weeks so as to permit the vessels at the placental site to become at least partially obliterated and thus facilitate the operation and minimize the troublesome and dangerous bleeding.

Needless to say, the surgical approach to any type of abnormal pregnancy should be most carefully planned and prepared, with transfusions and methods for treating shock immediately available.

The use of large doses of stilbestrol offers some hope in treating these cases of extra-uterine placenta. It is known that stilbestrol in large doses (5 to 25 mg. or more) will stop uterine bleeding by causing shrinking or atrophic changes to take place in the endometrium. For example, when small pieces of placental tissue are retained within the uterus these will be sloughed off following this medication. With this in mind, stilbestrol was given in the case reported in this paper, with favorable results. The placental site, which was the small intestines, was rendered bloodless and was completely healed at the time of the second operation.

This use of stilbestrol offers a definite improvement in the method of treatment of the extra-uterine placenta and has previously been reported in the literature.

CASE REPORT

A 32 year old colored female was first seen when she reported to the clinic September 17, 1942, stating that she had been sent because of pregnancy complicated by tubal infection, giving as her last menstrual period March 1, 1942. She complained of aching in the lower abdomen and back. She stated that there had been some pain in the abdomen for the past eleven years but that it had been worse in the past four months.

The menstrual history was as follows: Delivery of a normal child November 27, 1941, with menstruation reported to be normal January, February, and March 1, 1942. There had been spotting between March 15 and April 30, 1942.

In May, 1942 she had had a severe attack of pelvic pain and had been treated palliatively for pelvic inflammatory disease. The acute distress subsided but some dull aching continued.

She had been pregnant eight times, as follows:

1925—Miscarriage at two months.
1926—Miscarriage at two months.
1927—Miscarriage at two months.
1931—Living child at term.
1937—Living child at term.
1940—Stillbirth at term.
1941—Living child at term.
1942—Abdominal pregnancy.

The past history was negative otherwise, except for syphilis, discovered five years previously for which she had since been treated irregularly by private physicians and clinics.

, Examination revealed a fairly well developed and nourished colored female, subacutely ill. Blood pressure 105 systolic, 70 diastolic; heart and lungs normal.

The abdomen was distended to the size of a seven and one-half months' gestation. The wall was thin and the fetal small parts were easily made out on the left and anteriorly. Fetal activity was marked which caused unusual discomfort. The fetal heart was audible, the rate being 130.

Pelvic examination showed a parous outlet, moderately relaxed; the cervix moderately firm, and posterior; the os about one finger dilated. A slightly soft mass was felt anteriorly which was apparently the size of a six to eight week pregnant uterus; movement was definitely limited. The fetal outline was above the mass.

A flat plate of the abdomen revealed an anencephalic monster at seven and one-half months' gestation in the breech presentation.

Due to the possibility of the abdominal pregnancy, with the definite x-ray knowledge of an anencephalic monster, a hysterogram was done with the injection of lipiodol as for a uterosalpingogram.

The plate showed the opaque media in the lower abdomen corresponding to the size and position of the mass found on palpation. The mass did not correspond to the typical outline of a uterus. For this reason, the definite diagnosis of an abdominal pregnancy could not be made from the x-ray findings. However, correlating the physical findings

and the roentgenological study the conclusion was reached that the fetus was above the uterus.

The laboratory report was as follows:

Hemoglobin 62 per cent, leukocytes 10,900, lymphocytes 18, neutrophils (segment) 80, erythrocytes 4,100,000, color index 0.77, neutrophils (stab) 1, eosinophils 1. Blood: Kahn Standard, negative; Kolmer Wassermann, negative. Spinal fluid: Negative serology.

Having concluded that there was an anencephalic monster as an ahdominal pregnancy, there was no point in further delay even though the pregnancy was slightly less than eight months. Had the fetus been normal, careful expectant treatment would have been indicated, but with a nonviable fetus, the hest interests of the mother demanded immediate surgical intervention.

A laparotomy was performed on September 21, 1942 under spinal anesthesia. The fetus was found to be in the abdominal cavity and was delivered with ease. The amniotic sac was very thin with only a small amount of fluid. There was some evidence of leakage of fluid into the peritoneal cavity. There were a few, scattered, old blood clots attached over this area.

The placenta was attached high, apparently on a mass of intestines. No free loops of intestines were encountered. No free bleeding was seen. No attempt was made to deliver the placenta because of its high implantation with no evidence of separation or bleeding. The cord was tied short. The uterus was about the size of a six to eight week pregnancy with many adhesions involving the pelvic structures.

Sulfanilamide powder was dusted into the peritoneal cavity and the abdominal wall was closed in layers without drainage.

In reconstructing and reviewing the history some interesting facts are obvious. Pregnancy occurred presumably after the February period, the patient perhaps menstruating in March after conception took place. This was apparently a tubal ectopic pregnancy which was expelled into the abdominal cavity, thus giving rise to the acute pelvic symptoms which were interpreted as acute pelvic inflammatory disease in May, about eight weeks after onset of gestation.

At that time palliative, expectant treatment was given consisting of intravenous glucose and rest in bed, the patient being carefully watched for a few days for further symptoms. The symptoms were slow in subsiding.

She was then put on stilbestrol, 50 mg. a day. Stilbestrol has been known to cause changes in the normally placed endometrium after delivery, thus checking bleeding (Karnaky). It was hoped that it would hasten atrophic changes and the separation in this case and minimize the danger of hemorrhage. Definite improvement was noted.

The interpretation of the acute symptoms was that there was some placental separation.

Delay in opening the abdomen was advised, awaiting full effect from the stilbestrol as there was the possibility of causing further bleeding if the placenta was to be completely removed. The abdominal symptoms subsided but the movable, somewhat tender mass in the lower abdomen persisted.

On January 6, 1943, about three and one-half months after delivery, a laparotomy was done to remove the placenta. The operative procedure was quite easily accomplished as soon as the definite landmarks were made out. It consisted in clamping and tying the small pedicle attached to the left broad ligament.

The mass was found to be covered entirely by a smooth coat without any evidence of the raw area typically found on the "under" or maternal side of the placenta. The only attachment which was found was that of the pedicle which was fastened to the upper portion of the uterus and to the left broad ligament. The interpretation of this transformation from an attached abdominal placenta to a completely smooth covered mass, is that the placenta completely separated from the implantation site, hastened by the large doses of stilbestrol over a period of time. The placenta then apparently dropped to the pelvis and was secondarily attached to the upper portion of the uterus and to the left broad ligament, reestablishing blood supply at that point. The raw surface of the placenta was then apparently covered by the fibrous cells similar to those of other foreign bodies. The patient's postoperative course was uneventful.

This particular use of stilbestrol changes the consideration of the extra-uterine placenta. A secondary operation for its removal will be required several months after the delivery of the fetus by laparotomy, but the patient is much more comfortable and it completes the medical care unless further complications develop. In other words, the patient is not in continued danger of obstruc-

tion, hemorrhage, infection, or other accidents from an intra-abdominal mass.

SUMMARY

A case report is given of a near term abdominal pregnancy (anencephalic monster)

The placenta was left in and the patient was treated with large doses of stilbestrol, 50 mg. daily, which apparently hastened and facilitated the placental separation and the secondary operation for removal of the placenta.

BIBLIOGRAPHY

Anspach, B. M.: *Ectopic Pregnancy*. Obstetrics and Gynecology (Curtis) Vol. 3:369. W. B. Saunders Co., 1933.

Aschheim, S.: *Simplified Method for Biological Diagnosis of Pregnancy*. (New York, N. Y.) J. Lab. & Clin. Med., 27:547-51, January, 1942.

Beck, Alfred C.: *Treatment of Extra-uterine Pregnancy After the Fifth Month*, J. A. M. A., Vol. 73, No. 13, September 27, 1919.

Bodenheimer, J. M.: *Abdominal Pregnancy*, New Orleans M. & S. J., 92:454-456, February, 1940.

Brown, J. Harold: *Abdominal Pregnancy*, N. W. M. J., 40:414-416, November, 1941.

Falls, Frederick H.: *The Diagnosis and Treatment of Ectopic Pregnancy*, (Chicago) South. Surg., 10:347-63, May, 1941.

Falls, Frederick H.; Freda, Vincent C., and Cohen, Harold H.: *A Skin Test for Diagnosis of Pregnancy*, (Univ. of Illinois, Chicago), Am. J. Obst. & Gynec., 41:431-38, March, 1941.

Fredrichs, A. V.: *The Application and Interpretation of the Friedman Modification of the Aschheim-Zondek Test*, (New Orleans), New Orleans M. & S. J., 93:408-12, February, 1941.

Geist, Samuel H.; Salmon, Udall J.; Salmon, A. Austin, and Frank, Irving L.: *A Six-Hour Pregnancy Test*, (Mount Sinai Hospital, New York, N. Y.), J. Clin. Endocrinol., 2:167-70, March, 1942.

Goldblatt, Myron E., and Schwartz, Harold A.: *Correlation of Friedman Test and Phase of Endometrium in Ectopic Pregnancy*, (New York Univ.), Am. J. Obst. & Gynec., 40:233-242, August, 1940.

Goldman, Lester M.: *The Colostrum Cutaneous Test for the Diagnosis of Pregnancy*, Kessler, Henry B., and Wilder, Mildred E. (Newark Beth Israel Hospital, Newark, N. J.), J. A. M. A., 119:130-2, May 9, 1942.

Hamblen, Robert N.: *Abdominal Pregnancy*, Tenn.-W. Va. Surg., 48:310-312, May, 1940.

Hoffman, Wilbur E.: *Abdominal Pregnancy Near Term*, W. Va. M. J., 33:496-497 and 498-503, November, 1937.

Karnaky, Karl John: *Endocrines in Gynecology and Obstetrics with Special Reference to Stilbestrol in Treatment of Uterine Bleeding*, Original Research on Menstruation, Texas State J. Med., 36:379-385, September, 1940.

Karnaky, Karl John: *Cause of Menstruation, Uterine Bleeding and Labor, New Theory*, M. Times, New York, 69:199-203, May, 1941.

Mandl, U. Schmidt: *Beitrage Zue Aetiologie Und Path., Anatomie Der Eileter-Schwanger-Schaften*, Arch. F. Gynaek, Berl, 1898, 56:401-487.

Mason, Lymen W.: *Advanced Abdominal Pregnancy*, Am. J. Obst. & Gynec., 39:756-762, May, 1940.

Mattingly, D., and Menville, L. J.: *Abdominal Pregnancy*, (New Orleans, La.), Radiology, 38:35-8, January, 1942.

McNeile, L. G.: *Diagnosis and Treatment of Abdominal Pregnancy, Report of Three Cases*, (Univ. of Southern California), West J. Surg., 45:119-133, March, 1937.

Mishell, Daniel R.: *Endometrial Biopsy in Early Extra-uterine Pregnancy*, (Newark, N. J.), Am. J. Obst. & Gynes., 41:129-134, January, 1941.

Paddock, Richard: *Test for Pregnancy; Technic and Comparative Results*, (St. Louis), South. M. J., 34; 174-77, February, 1941.

Reid, Ronald: *A Case of Abdominal Pregnancy*, British Med. J., 1301-2, June 18, 1938.

Schumann: *Extra-uterine Pregnancy*, Appleton, 1921.

Stein, Irving F.: *A Case of Unruptured Tubal Pregnancy Diagnosed by Gynecography*, (Michael Reese Hospital, Chicago, Ill.), Am. J. Obst. & Gynec., 43:525-6, March, 1942.

Stein, Irving F.: *Gynecographic Aid in the Diagnosis of Ectopic Pregnancy*, (Northwestern Univ. Medical School, Chicago, Ill.), Am. J. Obst. & Gynec., 43:400-9, March, 1942.

Ware, H. Hudnall, Jr., and Winn, W. V.: *A Study of One Hundred and Fifty Consecutive Cases of Ectopic Pregnancy*, (Medical College of Virginia Hospitals, Richmond), Am. J. Obst. & Gynec., 42:33-38, July, 1941.

Weisman, Abner I.; Snyder, Arnold F., and Coats, Christopher W.: *The Frog Test (Xenopus Laevis) as a Rapid Diagnostic Test for Pregnancy*, (Jewish Hospital, New York, N. Y.), Am. J. Obst. & Gynes., 43:135-9, January, 1942.

Weisman, Abner I.; Hoenig, Edward, and Coats, Christopher, W.: *The Frog Test (Xenopus Laevis) as a Rapid Method of Diagnosis in Ectopic Pregnancy*, (New York), M. Rec., 154:58-9, July.

*Eli Lilly and Company graciously supplied the stilbestrol and provided it in 25 mg. capsules which facilitated the administration. Their kindness is gratefully acknowledged.

Fifth Column Mouse

The U. S. Public Health Service has published a report of what it believes is the first discovery of a live mouse on a passenger plane in quarantine.

The animal was found in the galley of an airliner from San Juan, Puerto Rico, after the plane landed at the quarantine station in Miami, Fla.

The Federal health service points out that mice have been found to carry the germ of lymphocytic chorio-meningitis, a dangerous but little known disease which attacks humans. More important, they state, is the possibility of plague-infected rats boarding planes unknown to passengers or crew. The possibility is not remote now that foodstuffs, which attract rats, are carried in increasing amounts by transport planes for passenger meal service.

Plague germs have been found on fleas from rats and wild rodents in a number of western and midwestern states.

Redoubled vigilance on the part of plane companies and quarantine officers is urged. — *Science News Letter.*

Tuberculosis Abstracts

Furnished Through the Courtesy of the West Virginia Tuberculosis Association

The first step in the rehabilitation of a tuberculous person is physical restoration, which is particularly the province of the physician. In the further adjustment of the inactive patient the lay worker who attempts to serve the patient without learning the story of diagnosis, treatment and recovery from the physician, treads on quicksand. Most successful rehabilitation follows the concerted application of the medical skill of the physician and the special information and training of qualified lay workers. Practical suggestions for the family physician who is interested in such coordination are here presented by Dr. F. L. Jennings.

The Family Doctor, the Patient and the Job

The private physician who has guided his patient through recovery from pulmonary tuberculosis is now being asked frequently to advise concerning some job which that patient may attempt without too great hazard. In this general manpower shortage, the patient with inactive tuberculosis, whether from civilian life, from induction centers, or discharged from military services, can find employment readily in many localities, particularly if he has an established skill. Beside that economic need which makes many patients reluctant to continue treatment for the prescribed period, patients now are moved by the wish to become a part of the war effort and sometimes by high wages. Some employers who hire all comers are unlikely to establish any safeguards for handicapped workers.

One of the physician's paramount difficulties has been the item of sufficiently definite information about the job in question. Jobs are changing rapidly. The exhausting task of a year ago has been reduced to machine-tending. Redesign, retooling, reorganization, rerouting, continue to make more specifications obsolete. Keeping up with such rapid and drastic change is impossible alike for any physician or lay worker without current sources of industrial information. Some physicians have sought to bridge this difficulty by such general terms as "light work," hoping thereby to protect the patient from excessive exertion, strain and tension. Unfortunately, employers' requirements are definite. Employment placement interviewers must meet these definite requirements. A patient's ability to do "light work" is indefinite and unsaleable.

But there are now official and unofficial sources of information through which physician and patient may usually find definite indications concerning which job is free from undesirable hazards. The official services include the United States Employment Service, which has branch offices in most population centers, and the State Vocational Rehabilitation Services. The United States Employment Service has the most complete and currently accurate information on what jobs there are in each community and on what physical performance is required in each job. It has originated a "Physical Demands Form," which is being used experimentally to determine required physical activity and working conditions. This type of job analysis explores especially such items as continuous standing, sitting, lifting, stooping, etc. One purpose of this information is to check the specific requirements of the job against the specific limitations of the handicapped applicant.

Interested physicians may obtain copies of interim physical requirement forms from the National Tuberculosis Association. The larger offices of the U.S.E.S. also include executives or interviewers who have some experience in special placements and who are qualified to discuss the subject of suitable placement for recovered patients with their physicians. The U.S.E.S. has placed thousands of inactive tuberculous patients in hundreds of different jobs. The suitability of these placements has depended most of the time on the quality and quantity of medical information available.

When the recovered tuberculous patient has no marketable skill, or when his old job is contraindicated medically, application for training or retraining and placement should be made to the State Bureau of Vocational Rehabilitation. Financed by State appropriations and Federal matching funds, these Bureaus are empowered to impart specific vocational training and placement to handicapped adults in order to make them self-supporting.

The physician will find in Federal Form R-3a (revised), published by the Federal Vocational Rehabilitation Bureau and in the manual prepared for its interpretation (Misc. 2328) practical bases upon which rehabilitation agent and physician may cohere their services for the patient. The form and the manual are the result of many consultations between Federal rehabilitation personnel and members of the Council of the American Trudeau Society and other phthisiologists of long experience.

(Continued on page xxx)

The President's Page

When Senate Bill 1161 was introduced in the United States Senate, the foes of the medical profession, for the first time, clearly and unmistakably confirmed our conviction that for some time a concerted movement has been taking form in Washington to completely regiment the medical men of this country.

In fact, this bill even contemplates the full control of the dental and nursing professions, as well as medical education and hospital facilities. I quote from a pamphlet issued by the National Physician's Committee: "It is estimated that this bill will provide hospitalization and medical care for one hundred and ten million people in the United States. It provides placing in the hands of one man, the Surgeon General of the Public Health Service, the power and the authority to:

Hire doctors and establish rates of pay, possibly for all doctors.

Establish fee schedules for medical service.

Establish qualifications for specialists.

Determine the number of individuals for whom any physician may provide service.

Determine arbitrarily what hospitals or clinics may provide service for patients.

For a number of years many of us have, even to the point of becoming a nuisance, urged the profession to recognize the importance of fearlessly and honestly combating this socialistic trend, but, in most instances our pleading fell on deaf ears, the doctors being content with the oft heard comment: "It can't happen here." I want to tell you most emphatically that it can happen here and it will happen if Senate Bill 1161 is enacted into law.

The time for action is here. We can no longer be content with a "Let George do it" attitude. It is our responsibility, and whether or not this bill becomes law depends upon the action we take in the matter.

At a meeting in Parkersburg on July 15, attended by members of the Women's Auxiliary, the Advisory Committee of the State Medical Association, and the Chairman of our Fact Finding and Planning Committee, it was unanimously agreed that our best weapon against all types of "isms" is a carefully planned statewide educational program to be sponsored by the Women's Auxiliary. These women are anxious to participate in a constructive work, and if we will but give them moral and financial support I am confident a most effective program will be presented.

May I urge that each component medical society immediately appoint a sympathetic working committee to assist the local auxiliary chapter in furthering this important work.

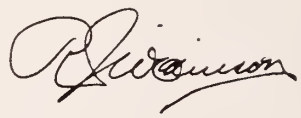
The inauguration of this statewide educational plan will mark the first time in our history that the Women's Auxiliary has attempted such a far-reaching program, one that will be most helpful to the medical profession. To be successful with this undertaking, considerable money will be required and obviously this should be supplied by our physicians. Let us give these women the financial support they need, for after all, a few dollars means nothing if the medical profession can be saved.

May I suggest:

That you write your senators today for a copy of Senate Bill 1161. After studying the bill, become a committee of one to enlighten your patients and the public generally as to the evils of this legislation.

That you write the National Physicians' Committee, 55 East Washington Street, Chicago, Ill., for literature dealing with all forms of socialized medicine. (Don't forget to enclose a check, for this committee is doing a good work and money is urgently needed).

That you render every assistance to your Fact Finding and Planning Committee in reaching decisions that will vitally affect not only the medical profession but every citizen of West Virginia.



West Virginia Medical Journal

Official Journal of
The West Virginia State Medical Association
302 Atlas Bldg., Charleston, West Va.

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Associate Editors

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Editor Emeritus

James R. Bloss, M. D. ..... Huntington

Business Manager

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Published monthly on the first day of the month, at Charleston, by The West Virginia State Medical Association.

Original articles are accepted on condition that they are contributed exclusively to the Journal.

Advertising rates furnished upon request. All advertisements must conform to the standard established by the Council of Pharmacy and Chemistry of the American Medical Association.

Address all communications to Business Manager, West Virginia Medical Journal, Box 1031, Charleston, West Va. Phone, Capitol 34-625.

SUBSCRIPTION $3.50 PER YEAR

Entered as second-class matter, January 1, 1926. Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917. Authorized July 24, 1919.

LET'S DIRECT THE CHANGES

The charge so often directed at the medical profession that it is economically static and that its members would "walk in the trodden way" is not valid as far as the great majority of the profession is concerned. The authorization by the House of Delegates of the American Medical Association for the appointment of a Council on Medical Service and Public Relations is ample evidence that the organized profession is prepared to direct and guide such changes in the medical and health aspects as are likely to come in the period of great change which appears to be just around the corner in the predictable future. The character and attainments of the men chosen to membership on that Council bespeak success for its efforts in furnishing satisfactory medical service to all the people and proper moulding of correct relationships between the laity and the profession. The Planning Committee of our own State Medical Association has essentially the same function to perform at the state level. We confidently believe that this Committee can do as satisfactory a job in West Virginia as the newly established Council can do in its nationwide task.

The profession by and large is ready to meet the issue. One of the most intelligent comments along this line that we have heard comes from one of our members now in the armed forces and is contained in a letter of comment upon Dr. Wilkinson's presidential address before the recent meeting of the State Association. It is so sensible and so apropos that we quote three paragraphs:

"It has been my observation that some of those most vociferous in their protests against 'socialized medicine' have been the very ones guilty of the practices that have been bringing the issue to a focus. Moreover, it would appear that their understanding of the fundamentals behind the whole trend is quite superficial. They have lost sight of the fact that change is one of the fundamental laws of the universe. Instead of trying to direct that change into the right and most desirable channels, they have been blindly and dogmatically bucking the whole issue.

"Change there should be, and I'm not so certain that much of it may not be salutary. The point paramount is to direct that change intelligently, patiently, and yet positively to the end that the medical profession may not descend to a mediocre level and the service rendered the people is not likewise of an inferior quality.

"No scheme can be ideal for any group; it must or should be a balance that promises the greatest value for the greatest number. Why do we resist change rather than try to direct it as nearly aright as is humanly possible?"

Fantastic changes in medical practice are being contemplated by some of the would-be-great social planners in the national capital. Senate Bill 1161, the so-called Wagner-Murray bill, is before the Senate Committee on Finance. Under the guise of social security, this bill, if enacted into law, would initiate an annual payroll tax of approximately twelve billion dollars, half payable by employee and half by employer. Of this vast

sum, one-fourth, or approximately as much as the total receipts of the Federal Government (exclusive of borrowing) for the year 1931, will be earmarked for the cost of socialized medicine. Think of it! A plan to spend annually as much money on a state medicine program as the entire annual income of the United States a bare dozen years ago!

Certainly, if change is to come, the medical profession which is the only segment of our population with the training and experience necessary to plan and operate a health and medical care program adequate to the needs of the American people, should formulate the plan and guide the changes which are to come in the general readjustment predicted for the post-war world.

Every doctor of medicine in West Virginia should write each of our senators requesting a copy of Senate Bill 1161. After studying its medical and health implications, then he should write each of these senators just what he believes the effect of such legislation will be on health and welfare of the populace generally.

Changes are in the offing. Just what they will be, none can foresee, but the medical profession must be the guiding hand to direct changes which are to come in the realm of medical care.

TERMINOLOGY IN OXYGEN WANT

At the present time there is a great deal of interest in the subject of anoxia or oxygen want. This interest doubtless has been stimulated by the ever increasing importance of the airplane in war and commerce. Since the average intelligent layman is keenly interested in the subject of anoxia, it behooves the physician to have a good understanding of the various terms used in connection with this condition.

The term *asphyxia* is of immediate interest. It is derived from the Greek and actually means, "without a pulse." The term is an unfortunate one and it is a pity that it is so often used wrongly in the medical literature. It should be used only when there is an accumulation of carbon dioxide in the alveolar air and in the tissues of the body—strangling or drowning produces this condition. *Anoxia* causes hyperventilation and the body has an opportunity of blowing off the carbon dioxide, so that most conditions of anoxia are not associated with *asphyxia*.

It should be emphasized that the terms *anoxia* and *anoxemia* should not be used synonomously. The latter word, *anoxemia*, is derived from the Greek and means a deficient amount of oxygen in the blood. It should be used only in that sense, because there are conditions which produce oxygen want in the body even though there is a sufficient amount of oxygen in the blood. *Anoxemia* is one form of *anoxia*.

In order to avoid misunderstanding in this connection, Professor Barcroft,[1] the distinguished English physiologist, suggested that the term *anoxia* be applied to any condition in the body associated with oxygen lack. This word is also derived from Greek and since it has the prefix "a" the purist could insist that it really means without oxygen, but it should rather be interpreted as a lack of oxygen. We have a precedent for this, because when the term anemic is used certainly a bloodless condition is not implied. The term *hypoxia* used so much in the foreign literature is less euphonious and less well-established by usage.

Professor Barcroft suggested that three type of anoxia be recognized: (1) *Anoxic anoxia* (or anoxemia)—in this type there is a lack of oxygen in the arterial blood. It may be produced by going aloft or by certain abnormal conditions in the lungs. (2) *Anemic anoxia*—here the oxygen tension is normal, but the amount of effective hemoglobin is inadequate. It may be produced, of course, by hemorrhage and also by carbon monoxide poisoning. (3) *Stagnant anoxia*—the arterial blood has a normal amount of oxygen under normal tension, but it is not

1. Barcroft, J., Lancet, **2**, 485, 1920.

given off to the tissues in sufficient amounts. It may be produced by any factor which produces a stagnation of the blood, such as cardiac failure.

Besides the three types of anoxia previously described, Peters and Van Slyke[2] appropriately have suggested a fourth, namely, *histotoxic anoxia*. In this type there is plenty of oxygen in the blood, but the tissue cells are poisoned and therefore cannot make proper use of it. Cyanide poisoning produces this condition; certain anesthetic agents produce it in a much less degree.

In order then to use an exact and acceptable terminology when speaking of anoxia, it should be specified whether it is the anoxic, anemic, stagnant or the histotoxic type which is meant.

2. Peters, J. P. and Van Slyke, D. D. "Quantitative Clinical Chemistry" (Baltimore: Williams & Wilkins Co., 1932), Vol. I.

POLIO PREVENTION

In a letter to the editor of *The Journal of the American Medical Association*, Philip M. Stimson, a prominent New York pediatrician, discusses the prevention of the spread of poliomyelitis from the standpoint of our present day knowledge of the disease.

The season makes the subject a timely one, and the fact that *musca domestica*, which is under suspicion as an insect vector of polio virus, is unusually prevalent in West Virginia this summer, makes his ideas of especial interest to the profession now. His suggestions to be followed when poliomyelitis is known to be present in a community are:

"1. Avoid the use of any water that is possibly contaminated with sewage either for drinking, swimming or washing utensils. We know that sewage can carry the virus considerable distances and for an appreciable time.

"2. Avoid exhaustion from exertion or chilling. We know that overexertion and chilling during the incubation period tend to augment the oncoming disease.

"3. Avoid injury to the mucous membranes of the nose and throat, such as that resulting from a tonsil operation. We know that poliomyelitis exposures in the early post-tonsillectomy period are liable to result in severe—even fatal—infections, usually of the bulbar type.

"4. Treat every minor illness as a possible case of poliomyelitis, particularly if there is fever, headache and some spasm of the neck, spine and hamstrings. We know that very mild cases of poliomyelitis without recognizable paralysis are much more numerous than paralytic cases. Suspected patients should be kept quiet in bed for several days, and until passed as well by a competent examiner.

"5. Strive for proper sanitary conditions and, in particular, destroy flies and their breeding places. We know that flies can carry the causative virus of poliomyelitis, although it has not yet been proved that they can carry enough to infect human beings.

"6. Avoid unnecessary physical contacts with other people, wash hands carefully before eating, and don't put unclean objects in the mouth. We know that many healthy people carry the virus in their intestines and that for some cases, perhaps most, the port of entry of the infection is the mouth.

"7. Don't prescribe or take drugs or chemicals that are intended to protect against the disease. As yet we know of none that will do this."

A LETTER A WEEK

The use of "V-Mail" for correspondence with members of the armed forces overseas provides an easy method for quick delivery of first class mail. Special stationery obtainable without cost at all post offices is used for this purpose. The regular postage rates apply.

The letters are first photographed, then reduced to the size of a postage stamp and reproduced on a micro-film. Thousands of letters are on one reel, which is delivered overseas by army planes. The film is developed and the letters enlarged and reproduced on stationery about 4" x 5", and then delivered to the addressees. The same procedure applies to mail sent home from overseas.

West Virginia has over four hundred doctors in the service. Their greatest need is for mail from home. If each member of the West Virginia State Medical Association would write one letter each week to a West Virginia doctor in the army or navy, their life over there, and in army camps and hos-

pitals over here, would be brightened considerably. In almost every letter received at the State Association Headquarters from doctors in the service, the question most frequently asked is "What are the doctors doing back home?" These men in the service of their country are hungry for news from the home front. To help supply this great need, every effort possible is being made to have each copy of the West Virginia Medical Journal delivered to the addressee without delay.

The present addresses of probably ninety per cent of the members of the State Association now in military service are on file at the headquarters offices in Charleston. Included are the addresses of a great many of the doctors in service overseas. For obvious reasons, the designation of individual units is omitted in news notes concerning these doctors. However, full addresses, if available, may be obtained from that office.

The time it takes to write a few lines once a week to a doctor in the service is negligible. The results to be obtained are highly important. The morale of the boys in training camps and at the front in Europe, North Africa or the South Pacific is something that concerns us all. Surely each doctor at home can spare the few minutes necessary to write a letter to a confrere in the military service. Such a letter is worth its weight in gold to the addressee. If the doctor will give the time, Uncle Sam and his highly efficient postal service will do the rest.

Regular Check-up Still Important

In spite of the steady improvement in diagnostic techniques and facilities during the past twenty years, little substantial progress has been made in finding cases of early tuberculosis. The reasons for this failure are too well known to call for discussion here. Briefly they can be reduced to two facts: early tuberculosis rarely gives rise to symptoms, and apparently well people seldom consult a doctor.—Henry D. Chadwick, M.D. and Alton S. Pope, M.D. The Modern Attack on T.B.

General News

PHC ADOPTS TB REGULATIONS AND NAMES STATE ADVISORY COMMITTEE

At the regular meeting of the Public Health Council, held July 6, 7, and 8, at Charleston, regulations were adopted governing the financing of cases of tuberculosis from funds appropriated at the last session of the legislature. The standards were previously agreed upon at a meeting of the Council held June 16 and 17, and very few changes were made at the July meeting.

Briefly, the method of admission of the indigent tuberculous to state sanatoria is as follows: The physician who is treating a case of tuberculosis which in his judgment is eligible for financial assistance shall present the case to the local health officer, with application signed by the physician and patient. The health officer will immediately request an investigation by a D. P. A. field worker, and also an investigation by a representative of the W. Va. Tuberculosis and Health Association, if a local chapter is located in the community. This is for the purpose of determining whether or not such person is eligible for hospitalization under the needy tuberculosis program.

Emergency Cases

The certificate used for certifying the case to the State Department of Health must be signed by the family physician, the patient, the health officer, a representative of the West Virginia Tuberculosis and Health Association (if a chapter exists in that locality), and by three citizens of recognized standing in the community.

In emergency cases, the local health officer may contact the Director of the Bureau of Tuberculosis and obtain immediate hospitalization. The investigation of economic status and completion of the application must follow as rapidly as possible.

DPA Standards to Apply

The standards to be used by the State Department of Health in determining whether or not a person suffering from tuberculosis is entitled to receive aid from state funds will be the same standard monthly guide as that of the Department of Public Assistance, plus $30 per month. However, the ability of near relatives to provide care is to be taken into consideration.

The regulations adopted by the Public Health Council provide that any patient who applies for hospitalization thereunder and is admitted to a sanitorium must remain there until discharged by the medical officer of the institution. If this regulation is violated, the patient may be denied further hospitalization through state funds.

The Council recommended the continued hospitalization for sixty days after July 1, 1943, of the 901 persons in the state tuberculosis sanitoria who have been placed there by County Courts and the Department of Public Assistance. The Council further requested the D. P. A. to make an immediate investigation to ascertain whether or not all such cases are needy and entitled to receive state aid.

Advisory Committee

An advisory committee of three members of the West Virginia State Medical Association was appointed by the Council to assist the Director of the Bureau in formulating policies and passing upon doubtful cases. The committee is composed of Drs. Wm. C. Stewart, George F. Grisinger and Leo H. Mynes, all of Charleston.

WOMAN'S AUXILIARY BOARD MEETS

A meeting of the Executive Board of the Woman's Auxiliary to the West Virginia State Medical Association was held at Parkersburg, July 15, for the purpose of completing plans for work during the ensuing year. The meeting was attended by the members of the Advisory Board, Dr. Ray M. Bobbitt, of Huntington, Chairman of the newly appointed Fact-Finding and Planning Committee, and Dr. R. J. Wilkinson, President of the State Medical Association. An educational program is planned for the early fall and winter to cover the entire state. The many problems confronting the medical profession today will be discussed at meetings which will be sponsored by the Auxiliary. Definite plans for the campaign will be mapped by the Auxiliary during the next few weeks.

APPLICANTS FOR LICENSURE EXAMINED

A total of thirty-three applicants for license to practice medicine in West Virginia were examined by the Public Health Council at the regular meeting held at Charleston, July 6-7-8, 1943. Nineteen of the applicants took the examination and the credentials of 14 others were examined for licensure by reciprocity. The results of the examination will be announced about the first of August.

DR. OFFNER NEW HEALTH COMMISSIONER

Dr. J. E. Offner, of Weston, who has served as superintendent of the Weston State Hospital since 1933, has been appointed by Governor Neely as State Health Commissioner to succeed Dr. C. F. McClintic of Williamsburg. Dr. Offner assumed his new duties July 1. His term expires May 31, 1947.

The new Commissioner of Health was appointed head of the Weston institution after more than twenty years of the practice of his profession in Fairmont. He is a native of Mineral County, and graduated at the University of Maryland in 1904. Later, he took postgraduate work in Philadelphia and New York. He is a member of the Lewis County Medical Society, the West Virginia State Medical Association, the American Medical Association, and the American Psychiatric Association. He also holds membership in Theta Kappa Psi, national honorary medical fraternity.

Dr. McClintic's term had expired May 31, 1943. He first assumed office March 17, 1941. He had served as warden of the West Virginia State Penitentiary at Moundsville from 1933 to 1937.

CITY AND COUNTY HEALTH OFFICERS

At a meeting of the Public Health Council held July 6, 1943, the following full-time and part-time city and county health officers were confirmed:

Full-time: Drs. Albert M. Price, Kanawha County Health Department, Charleston; J. E. Robins, Jr., City Health Department, Charleston; David B. Lepper, Bluefield; A. J. Niehaus, Wheeling. Part-time: Drs. Guy H. Michael, Belington; R. V. Shirley, Ceredo; G. P. Morison, Charles Town; R. D. Stout, Grafton; S. G. Moore, Harpers Ferry; E. A. Courrier, Keyser; W. M. Harloe, Matoaka; A. G. Lanham, Ronceverte; Fred F. Holroyd, Princeton; and Worth B. Forman, Buckhannon.

THE AMERICAN THERAPEUTIC SOCIETY

The membership of the American Therapeutic Society has voted to hold the 1943 annual meeting at Cincinnati on Sunday and Monday, November 14 and 15, immediately preceding the meeting of the Southern Medical Association. The annual business meeting will be held Sunday evening and the scientific session Monday. Due to war conditions, the scientific session will be confined to one day. The Netherland Plaza has been selected as the headquarters hotel.

LIBRARY OF THE

GOVERNOR REAPPOINTS PHC MEMBERS

Dr. W. R. Goff, of Parkersburg, Dr. W. P. Bittinger, of Summerlee, and Dr. Walter E. Vest, of Huntington, have been reappointed by Governor M. M. Neely as members of the Public Health Council for the term ending June 30, 1947.

Dr. Vest, who is A. M. A. delegate from West Virginia and editor of the West Virginia Medical Journal, has been a member of the Council since 1933, and has served as its president since 1937. Dr. Goff has been a member since March, 1942, and Dr. Bittinger is just beginning his second four-year term, having first been appointed in 1939.

Dr. J. E. Offner, who recently succeeded Dr. C. F. McClintic as State Health Commissioner, is a member and ex-officio secretary of the Council. Other members are Drs. M. T. Morrison, Sutton; B. H. Swint, Charleston; W. C. D. McCuskey, Wheeling; and, N. H. Baker, D.D.S., Charleston.

JOE SAVAGE RETURNS FOR VISIT

Major Joe W. Savage, Commandant of Cadets at the Army Air Force Navigation School, at Hondo, Texas, made a "flying" visit to his home at Charleston the middle of July. He arrived and departed by a huge Army cargo plane, making the trip in good time without incident. Joe devoted the whole two days at home visiting friends and catching up with the news of the medical world at the headquarters office of the State Medical Association. He is the picture of health and is intensely interested in his work with the Army Air Force in Texas.

NAMED TO NURSES' EXAMINING BOARD

Dr. William C. D. McCuskey of Wheeling, member of the Public Health Council, has been appointed by Governor Neely as a member of the State Board of Examiners for Nurses for the term ending June 30, 1944. He succeeds Dr. Henry R. Glass of Charleston, who resigned November 1, 1942.

ZONE NUMBERS EXPEDITE DELIVERY

Under a new zoning distribution plan adopted by the Post Office Department for the purpose of expediting the delivery of mail, the West Virginia State Medical Association and The West Virginia Medical Journal have been placed in Charleston Zone 24. Mail for both the State Medical Association and The Journal should be addressed as follows: Box 1031, Charleston 24, West Virginia.

THE SOUTHERN MEDICAL ASSOCIATION

The 37th annual session of the Southern Medical Association will be held in Cincinnati, Tuesday, Wednesday and Thursday, November 16, 17 and 18, 1943. The Campbell-Kenton County Medical Society of Kentucky, and the Cincinnati Academy of Medicine will act as co-hosts. Tuesday will be Kentucky and Ohio day and the program will be presented by physicians from both sides of the river in the Cincinnati metropolitan area.

Owing to the fact that America is engaged in all out war, the program will be divided about equally between civilian physicians and men in the armed forces. Formal section meetings will not be held and the present section organizations will be "frozen" until next year. Two general sessions will meet concurrently Wednesday and Thursday, one general medical and the other general surgical. Each of the twenty-one sections will furnish its proportionate share of the papers for the general sessions, and the papers will be listed on the program from the section in which they originate. There will be no discussion, but a question and answer period will follow each paper.

Organizations meeting conjointly with the Southern Medical Association will be: The American Public Health Association, Southern Branch; The National Malaria Society; The American Society of Tropical Medicine; The American Academy of Tropical Medicine; The American Therapeutic Society; The American College of Chest Physicians, Southern Chapter; The American Academy of Pediatrics, Region 2; and The Woman's Auxiliary to the Southern Medical Association. This will be by far the largest medical meeting in the world in 1943, and a large attendance is anticipated. The Netherland Plaza will be the headquarters hotel.

WARTIME HEALTH CONFERENCE

The Wartime Conference and the 72nd Annual Business Meeting of the American Public Health Association will be held in New York City, October 12-14. Headquarters will be maintained at the Hotel Pennsylvania. Health workers within easy access of New York City are invited to attend. Representation of distant areas will be provided by individual appointed delegates. Information concerning the conference may be obtained from the American Public Health Association, 1790 Broadway, New York 19, N. Y.

FOOD RATIONING ORDERS AMENDED

Recent amendments to food rationing orders, involving osteopaths, condensed milk, fats, oils and hospitals, are summarized in *The Journal of the American Medical Association* for July 17 as follows:

The Office of Price Administration announced on July 2 that any medical practitioner authorized by the state in which he practices to prescribe all internal drugs is also authorized to certify that a person requires supplementary food rations for health reasons. Authority to make such certification was previously confined to doctors of medicine. OPA has now broadened the authority so that osteopaths in states which license osteopaths to prescribe all internal drugs may also prescribe supplementary food rations. Food rationing regulations provide that a person whose health requires more rationed food than his ration points permit him to buy may apply to his local board for necessary additional points. In some illnesses foods are prescribed in addition to drugs or medicines, or as a substitute for them. In some counties the work of ration boards in processing such applications has been much simplified through the voluntary help of the doctors themselves. By establishing panels to review all medical certifications and to advise the boards, responsibility for issuing extra rations for health reasons has been kept on a professional level.

The Office of Price Administration under date of June 1 placed evaporated and condensed milk on the list of rationed products. These types of milk are added to the group of rationed foods containing meats and fats, for which red ration stamps are needed, without any increase in the total number of points allowed for this group. One point is required for one 14½ ounce can or for two 6 ounce cans or for two 8 ounce cans. This means that the child may use 7 of his 16 points per week for his milk requirements in terms of evaporated milk, which allows slightly less than the equivalent of a quart of whole milk per day, and have 9 points remaining for his meat and fat requirements. An invalid or any other person whose health requires that he have more canned milk than he can obtain with the stamps in his War Ration Book II may apply at his local War Price and Rationing Board for additional points. The consumer must submit a written statement of a licensed physician showing why he must have more canned milk, the amount needed during the succeeding two months and why unrationed foods cannot be used instead. A supplemental allotment to acquire canned evaporated and condensed milk needed by a hospital to meet the dietary needs of its patients may be obtained on application to its local War Price and Rationing Board. It is understood that, if the present method of rationing does not make evaporated milk available in all areas for infants and children, some more effective method will be worked out.

The Office of Price Administration has issued an amendment to ration order number 16 (R. O. 16, amendment 25) which permits the use of rationed fats and oils for external therapeutic purposes. This includes the use of vegetable oils, such as cottonseed oil, for bathing newborn infants, for external application in skin diseases, for urethral injection or lubrication of urethral instruments, and for x-ray visualization. Such use of rationed fats and oils is defined as "industrial consumption" and persons using these products for such purposes are classified as "industrial consumers." An industrial consumer engaged in the care and treatment of the sick and needing rationed fats and oils for this purpose may apply to his district Office of Price Administration for a certificate with which to acquire them. The procedure to be followed, briefly, is as follows: The application should be made on form R-1605 to the district office. If the applicant is a hospital the district office will pass on the application by using the same method of computing allowances as the local boards use in computing allotments for industrial users; otherwise the application will be forwarded to the Washington office for action. If the applicant requires more than he would receive by the method of computation described, he should also submit form R-315 stating the reasons for such request. An "industrial consumer" to whom a certificate is issued for "industrial consumption" of rationed fats and oils may use it only to acquire the foods for which application was made and may use those foods only for the purpose for which the application was granted.

For several months the Office of Price Administration and medical authorities have been studying the hospital problem with a view to developing a uniform procedure covering the granting of supplemental allotments for hospitals. Solution of the problem is believed near. In the meantime a provision in the regulations (section 11.6 of general ration order 5) should enable hospitals to obtain the necessary supplemental allotments so that patients need not suffer from dietary deficiency. This pro-

vision gives local boards authority to grant such allotments to meet the dietary requirements of patients living in and receiving care in hospitals whether or not such patients are on special diets. In determining the amount of the supplemental allotment of processed foods and the commodities covered by ration order 16, the local board will take into consideration the availability of fresh fruits and vegetables, unrationed substitutions such as poultry and fresh fish, and the physical facilities of hospitals to process and store such foods.

NEW COUNCIL OF THE A. M. A.

The new Council on Medical Services and Public Relations of the American Medical Association is composed of Drs. A. W. Adson, of Rochester, Minnesota; John H. Ftizgibbon, Portland, Oregon; J. R. McVay, Kansas City, Missouri; Waller S. Leathers, Dean of Vanderbilt University Medical School, Nashville, Tennessee; E. J. McCormick, Toledo, Ohio; Louis H. Bauer, Speaker of the House of Delegates, Medical Society of the State of New York, Hempstead, New York; Roger I. Lee, Boston, Chairman of the Board of Trustees; James E. Paullin, Atlanta, Georgia, President; and, Brig. Gen. Fred W. Rankin, Lexington, Kentucky, Past President of the American Medical Association.

CHANGES IN LOCATION

Dr. C. H. Engelfried, who has been a surgeon on the staff of Laird Memorial Hospital, Montgomery, since 1936, has moved to Charleston where he has offices in the Professional Building.

* * *

Dr. Harry H. Bolton, Jr., of Thomas, who has been engaged in coal mine practice for the past 23 years, has retired and moved to Hilliard, Florida. Dr. H. S. Parker, of McMechen, succeeds Doctor Bolton as mine physician for two of the coal companies which have extensive operations near Thomas.

* * *

Dr. L. A. Moser, of Minden, has moved to Charleston and opened offices with Dr. A. C. Litton, in the Day and Night Building.

DR. HEDRICK MARRIED

Dr. E. H. Hedrick, Superintendent of Pinecrest Sanitarium, at Beckley, was married Wednesday evening, June 23, to Miss Myrtle Adele Wade, of that city. The marriage was solemnized at Mount Vernon Methodist Church, in Baltimore.

MEDICAL AND SURGICAL SUPPLIES

Medical and surgical supplies valued at more than $59,000 were donated during the past six months by the Medical and Surgical Relief Committee to the U. S. Navy, the U. S. Coast Guard, the armed forces of our Allies and to welfare groups here and abroad. According to Mrs. Huttleson Rogers, executive chairman, the total value of shipments since the Committee was set up three years ago amounts to $551,699.24.

JULY MEETING OF CABELL SOCIETY

At the regular monthly meeting of the Cabell County Medical Society, held Thursday evening, July 8, 1943, at the Hotel Prichard, Huntington, a demonstration of the Singer Surgical Stitching Instrument was given. A short business session followed, after which light refreshments were served.

OHIO COUNTY ELECTS OFFICERS

At a recent meeting of the Ohio County Medical Society, the following new officers were elected for the ensuing year: President, Dr. Arley V. McCoy, Elm Grove; Vice President, Dr. D. E. Greenletch, Wheeling; Secretary, Dr. Robert W. W. Phillips, Wheeling; Treasurer, Dr. James C. Hazlett, Wheeling.

N.S.P.B. OFFERS AWARD

The National Society for the Prevention of Blindness has announced that a prize of $250 will be awarded for the most original paper adding to the present knowledge concerning medical treatment of non-congestive glaucoma. Papers, which may be presented by any practicing ophthalmologist of the Western Hemisphere, should be in the office of the Society, 1790 Broadway, New York City, by September, 1944.

ACCEPTS APPOINTMENT AT EVANSVILLE

Dr. Joan Goebel, who has been located at Parkersburg for the past several years, has accepted appointment as chief anesthetist at the Deaconess Hospital, Evansville, Indiana.

WRITE A LETTER

Addresses of members of the State Medical Association who are in the military service may be obtained from the headquarters office at Charleston. Requests for this information should be addressed to West Virginia State Medical Association, Box 1031, Charleston 24, W. Va.

DOCTORS AND HOSPITALS SUPPORT NEW MATERNITY CARE PROGRAM

Under the emergency Maternity and Infant care program which is being administered in West Virginia by the State Health Department under allotment made by the U. S. Department of Labor, medical care was authorized for 676 cases during the first eleven weeks' operation of the plan, according to a report as of July 15, prepared by Dr. J. E. Offner, State Health Commissioner. Of this number, at least 500 persons have received hospital care in 54 approved institutions in this state. Over 40 additional applications were awaiting approval as of that date. A total of 237 licensed doctors of medicine participated in the program.

The total amount of federal funds expended for maternity and child care during this period exceeds $50,000.

Dr. J. E. Offner, State Health Commissioner, is loud in his praise of West Virginia doctors and hospitals for their cooperation in inaugurating service under the program which has been approved by the Council of the West Virginia State Medical Association, which program was covered in full in an article in the June, 1943, issue of The Journal.

Dr. Offner again urged participating doctors to send in applications promptly and reminded them of the necessity of filing a record in connection with each case at the end of the six weeks postpartum period.

He reports that the participating hospitals, crowded for the most part during the emergency, and with a shortage of professional personnel, were doing everything possible to maintain good standards of obstetric and pediatric care.

Commenting on fears expressed by some doctors that the new maternity and infant care program is another attempt to socialize medical practice, Dr. Offner was emphatic in declaring that neither he nor the Director of the Division of Maternal and Child Hygiene, the Advisory Committee, nor the members of the Public Health Council, would sponsor the program if they believed that were in any sense an entering wedge for socialized medicine. "We believe that the best quality of clinical medical care can be given by keeping the practice of medicine as a private enterprise," he said. "This program is solely an emergency measure, designed to boost the morale on the home front for the men who are serving their country and receiving compensation of $78 per month or less."

The program is under the direct supervision of Dr. Lenore Patrick, Director of the Division of Maternal and Child Hygiene, who stated that well over 300 medical doctors of West Virginia had filed applications for participation in the program.

ATTEND REGIONAL HOSPITAL MEETING

A regional hospital meeting sponsored by the Children's Bureau of the U. S. Department of Labor was held at Washington, July 6, for the purpose of considering policies in connection with the payment of ward costs per patient day for service rendered under the new Emergency Maternity and Infant Care program for wives and children of enlisted men.

At this meeting hospital administrators were urged to submit per diem cost of ward care in accordance with the procedure outlined in the manual, "Hospital Accounting and Statistics," printed and distributed by the American Hospital Association.

Representing the State Department of Health at the meeting were Dr. Lenore Patrick, Director of the Division of Maternal and Child Hygiene; Mrs. Katherine Jones, Principal Clerk in the State Health Department; Dr. A. U. Tieche, Beckley; Dr. Paul R. Gerhardt, Director of the Bureau of Medical Services, Department of Public Assistance; Stanley Turk, superintendent of the Ohio Valley General Hospital, Wheeling; and Charles Vadian, superintendent of Fairmont General Hospital, Fairmont.

Obituaries

THOMAS DICKINSON BURGESS, M. D.

Dr. Thomas Dickinson Burgess, of Williamson, was born near St. Albans, December 15, 1869, son of James W. and Elizabeth (Harmon) Burgess. He graduated at the University of Maryland in 1892 and located at Matewan, where he established a hospital. From Matewan he moved to Louisa, Kentucky, and then to Williamson, where he had practiced medicine for the past 15 years.

Always active in civic affairs, Dr. Burgess had served as a director of the Williamson Chamber of Commerce. He was a Mason, and a member of the Mingo County Medical Society, the West Virginia State Medical Association, and the American Medical Association.

Burgess died of heart disease June 24, 1943, at his farm near Shelbyville, Kentucky. He had suffered a stroke about six months ago, and had retired from active practice. He is survived by his widow, two children, Mrs. K. C. Elswick, of Louisa, Kentucky, and Cornelius Burgess, of Radford, Virginia; two sisters, Mrs. G. A. Shumate, of Glen Lyn, Virginia, and Frances Burgess, of Huntington; and, one brother, Dr. William H. Burgess, of Williamson.

ADAM McCLINTIC BYRD, M. D.

Dr. Adam McClintic Byrd, of Bluefield, was born at Williamsville, Virginia, May 6, 1869. He graduated at Augusta Military Academy in 1888, and obtained his medical degree at the Medical College of Virginia. He was formerly a member of the staff of the federal hospital at Hot Springs, Arkansas, and the Mattie Williams Hospital, at Richlands, Virginia. He was located at Northfork for 12 years, and had practiced his profession at Bluefield for the past five years. He was a member of the Mercer County Medical Society, the West Virginia State Medical Association, and the American Medical Association.

Dr. Byrd died in a hospital at Bluefield, July 4, 1943, following a short illness. He is survived by a brother, Julian Byrd, of Covington, Virginia.

HARRIET B. JONES, M. D.

Dr. Harriet B. Jones, of Glen Dale, died at her home in that city June 28, 1943, following a long illness.

Dr. Jones was born at Edensburg, Pennsylvania, June 3, 1856, but spent her early childhood at Terra Alta. She graduated at the Woman's Medical College of Baltimore in 1884, and located at Wheeling. She was the first woman licensed to practice medicine in West Virginia. She was one of the earliest advocates of state tuberculosis institutions, and was largely responsible for the construction of Hopemont Sanitarium. She was also instrumental in the organization of the West Virginia Tuberculosis and Health Association, of which she was the first executive secretary.

As a member of the House of Delegates from Marshall County, Dr. Jones fought for improved health conditions in the state. Her public life also included a term as assistant superintendent of Weston State Hospital. She was active in the work of the Women's Christian Temperance Union and the West Virginia League of Women Voters. She was a good speaker, and lecture tours carried her frequently into every part of the state.

Dr. Jones, who was unmarried, had been in retirement for the past 15 years.

WILLIAM H. McCAULEY, M. D.

Dr. William H. McCauley, of Sutton, who had practiced medicine at Sutton for over fifty years, died suddenly at his home in that city July 2, 1943. He was active in practice up to the time of his death.

Dr. McCauley was born September 2, 1859, at Rock Cave. He graduated at the College of Physicians and Surgeons, Baltimore, in 1888, and located at Sutton. Except for the period from 1901 to 1905, when he served as assistant superintendent at Weston State Hospital, he spent the remainder of his life in that city. He was an honorary member of the Central West Virginia Medical Society, the West Virginia State Medical Association, and the American Medical Association. He is survived by two daughters, Mrs. Russell McKinney, of Weston, and Mrs. C. L. Hawkins, of Sutton.

EARL WELBORN OWEN, M. D.

Dr. Earl Welborn Owen, of Spencer, was born in 1898 in Stokes County, North Carolina. He graduated at Vanderbilt University in 1925 and served his internship at the Hospital of the Good Samaritan, in Los Angeles, California. He located at Spencer in 1931, where he served as city health officer for nine years. He was a Mason, member of Beni Kedem Shrine, and Phi Beta Pi, and was past president of the Rotary Club of Spencer. He was a member of Kanawha Medical Society, the West Virginia State Medical Association, and the American Medical Association.

Dr. Owen died in Los Angeles, May 17, 1943. He is survived by his widow, a daughter, Leith, and a son, James, of Spencer.

COL. LAMBERT RECOVERS

Lt. Col. L. Rush Lambert, State Medical Officer for Selective Service, who recently successfully underwent a gall-bladder operation at Ashford General Hospital, is convalescing at his home in Fairmont. He expects to attend the National Guard encampment at Camp Caddell near Kingwood in August.

WITH DOCTORS IN THE SERVICE

At Home

Lt. Col. William H. Riheldaffer, of Romney, who has been stationed at Ft. Hancock, N. J., is now in special training on the west coast. He writes that Capt. H. H. Golz, of Clarksburg, (now at Ft. Oglethorpe, Ga.) is the only West Virginia doctor he has seen in the past several months.

* * *

Maj. Arnold Wilson, of Welch, who has been stationed at Ft. Knox, has been transferred to the 228th station hospital at Camp Atterbury, Ind.

* * *

Lt. Comdr. J. O. Rankin, of Wheeling, is chief of the Orthopedic service in the U. S. Naval Hospital, at Memphis, Tenn.

* * *

Capt. James F. Hays (MC) USN, of Weston, is Chief of Medicine at the U. S. Naval Hospital, at San Diego, California. He has been in the Navy for several years and was on duty on a ship which successfully withstood the Jap raid on Pearl Harbor. Since that time he has seen action over a wide area in the South Pacific.

* * *

Lt. T. P. Mantz, of Charleston, is now attached to the 32nd General Hospital at Camp Bowie, Texas. He writes that doctors attached to the staff are given regular army training for a period of ten weeks, participating in troop movements and road trips, a fifteen mile hike still being on the "must" list each Saturday. He reports that the army food is excellent and living quarters most comfortable.

* * *

Dr. J. C. Huffman, of Buckhannon, who is attached to the station hospital at Ft. Knox, has been promoted from Captain to Major.

* * *

Lt. Frederick H. Dobbs (MC) USNR, of Wheeling, is attached to the Medical Department Dispensary at the U. S. Naval Air Station at Pensacola, Fla. He is serving as an aviation medical examiner and as a member of the Aircraft Crash Investigation Board. Referring to the picture of the mired automobile which accompanied his letter, Lt. Dobbs said, "I assure you that Florida has some good roads, too." He has been delivering lectures at the School of Aviation Medicine and states that he and Dr. V. T. Churchman, of Charleston, were members of the second graduating class at this school. Drs. Clyde Smith, of Beckley, N. H. Newhouse and Fred B. Carlson, of Charleston, and Marshall (Little Sleepy) Glenn, of Charles Town, have also attended the school.

* * *

Lt. Joseph T. Mallamo, of Fairmont, is engaged in general surgery at the station hospital at Camp Gruber, Oklahoma, where he has been stationed since October, 1942.

* * *

Lt. (j.g.) J. E. Grace (MC), USNR, of Cabin Creek, has been on sea duty since the middle of May. He states that the function of his medical unit is much like that of a small clinic. The medical complement consists of doctors, a dentist, pharmacists and an adequate number of corpsmen. "The most outstanding cases of interest," he writes, "have been rheumatic heart disease in men over twenty years of age, with no antecedent history."

* * *

Capt. S. W. Goff, of Parkersburg, is attached to the 31st Medical Regiment, in training "somewhere" in California.

* * *

Maj. Fred E. Brammer, of Dehue, is now attached to the station hospital at Camp Mackall, N. C. He was formerly stationed at Camp Wheeler, Georgia.

* * *

Capt. C. C. Carson, of Gassaway, is attached to the 274th Quartermaster Service Batallion at Ft. Jackson, S. C.

* * *

Capt. Julius L. Boiarsky, of Charleston, is with the 36th Portable Surgical Hospital activated at Camp Atterbury, Ind. According to a recent news dispatch, the personnel of portable surgical hospitals is being trained so that the best possible treatment can be given immediately to soldiers fighting in areas where rapid evacuation to the rear lines is impossible. These units will operate where wheeled transportation is extremely difficult or impossible, and all equipment will be hand carried. The training period is strenuous, and the men will be hardened physically as much as any man assigned to combat duty. Constant setting up and taking down of hospital equipment is included in the training so

that the men will be able to maintain the pace of rapidly moving battle lines in the present war. Capt. Boiarsky, who recently completed a course in surgery of the extremities at the graduate school, University of Pennsylvania, is in charge of plans and training in connection with the new portable hospital.

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Capt. T. H. Gordon, of New Martinsville, has been transferred from Camp Gordon, Florida, to Camp Pickett, Virginia.

* * *

Dr. Bert Bradford, Jr., of Charleston, who was recently promoted from Captain to Major, and who has been on maneuvers in the south for several weeks, has been assigned to the Mayo Clinic, at Rochester, Minnesota, for a special course in surgery.

* * *

Lt. Col. Everett H. Starcher, of Logan, who has been stationed in the west for several months, is now the Commanding Officer of the 318th Station Hospital at Camp White, Oregon.

* * *

Capt. H. J. Hancock, of Welch, has been transferred from Ft. Hayes, Ohio, to Texas, where he is attached to the 1st Auxiliary Surgical Group at Ft. Sam Houston.

* * *

Lt. A .Robert McLane, Jr., of Masontown, who has been stationed at Santa Ana, California, has been transferred to an air base in Arizona for special training.

* * *

Lt. Robert M. Sonneborn, of Wheeling, who has been stationed at the Naval Hospital at Portsmouth, Virginia, has been transferred to the Naval Hospital at Philadelphia.

* * *

Lt. Edward Press, of Charleston, has been transferred from the Medical Department, Army Air Base, Reno, Nevada, to the station hospital, Army Air Field, Homestead, Florida.

* * *

Lt. Glen Palmer, of Charleston, is attached to the 68th Medical Regiment at Camp Forrest, Tennessee.

* * *

Lt. Earl L. Shamblen, of Charleston, who has been stationed in California for several months, is now chief surgeon at a base hospital in Alaska.

Lt. F. L. Coffey, of Huntington, is attached to Valley Forge General Hospital at Phoenixville, Pa.

* * *

Dr. M. H. Bertling, of McComas, has been promoted from Captain to Major and has been transferred from Ft. Bragg, N. C., to the west coast.

* * *

Lieut. Leonard M. Eckmann, of South Charleston, batallion surgeon in the 9th Armored Division, is in special training in the California desert, which, he writes "consists of sand, greasewood (which punctures vehicles tires), and castus (which punctures men). There is no water, just jack rabbits, scorpions, tortoises and a few other types of life that survive for no earthly reason." The temperature, he states, has been 141 degrees. "Men are not so finisky as in civilian life," he says. "If the water is iced, we disregard any specks in it provided they do not swim actively." He has nothing but praise for the men with whom he is in training. His evaluation of them is that "they'll make a darn good fighting force."

* * *

Dr. John W. Hash, former member of the staff at Charleston General Hospital, who was recently promoted from 1st Lieutenant to Captain, has been named assistant chief of medical service of the 111th Station Hospital at Camp Wheeler, Georgia.

* * *

Lieut. F. C. Reel, of Charleston, who has been in special training at Carlisle Barracks, Pennsylvania, and at Walter Reed Hospital, Washington, for the past several months, has been transferred to the EENT service at the new Woodrow Wilson General Hospital, at Staunton, Virginia. At the present time, the work there consists for the most part in the treatment of the more serious and prolonged cases transferred from overseas and from surrounding station hospitals.

Abroad

Capt. James G. Ralston, of Clarksburg, who has been at a southern training camp for several months, is with the American forces in England.

* * *

Lt. R. M. Ferrell, of Webster Springs, is with the American forces in North Africa.

* * *

Maj. Athey R. Lutz, of Parkersburg, has been attached to an auxiliary surgical group that has seen service in various parts of the British Isles. He has spent several months in North Ireland. He and the

members of his unit are detailed for duty in hospitals carrying an overload of patients. At the present time, he is in the Orthopedic service in one of the most active hospitals in England.

* * *

Capt. E. N. DuPuy, of Beckley, has been with the American forces in North Africa since November, 1942.

* * *

Capt. Grover C. Hedrick, Jr., of Beckley and Lt. C. L. Houck, of Carbon, are with the American forces "somewhere" overseas.

* * *

North Africa, according to Lt. (j.g.) Edward E. Phillips, (MC) USNR, of Wheeling, is a most interesting country. "The Arabs," he writes, "reflect the nature of the land—placid most of the time, but cruel and savage at others. This is also true of the terrain, the climate, and the sea." Lt. Phillips, who is stationed among the French and Arabs in a small seaport town in Northwest Africa, expresses his appreciation for copies of the West Virginia Medical Journal, stating that there is always a scarcity of scientific reading material in the area where he is located.

Capt. John P. Brick, of Charleston, has been stationed in the Caribbean area for the past several months.

* * *

Capt. James L. Hager, of Charleston, who has been in Australia for several months is now on active sea duty in the South Pacific.

* * *

Delivery of mail is sometimes slow in the army. It took nearly two months for a letter to catch up with Capt. Franklin B. Murphy, of Wheeling, who is "somewhere" in the European theatre. He writes that he has seen Dr. George F. Evans, of Clarksburg, several times. He has had many interesting experiences which cannot yet be told, but states that the boys in the military service are being provided excellent care by the military units. Many difficulties, no doubt, have to be overcome, for he writes that "we are learning to live and work without a lot of the luxuries we once thought were necessities."

* * *

Maj. A. C. Chandler, of Charleston, who has been stationed at Camp Wheeler, Georgia, is now in special training somewhere on the west coast.

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Book Reviews

NEW AND NONOFFICIAL REMEDIES

New and Nonofficial Remedies, 1943, containing descriptions of the articles which stand accepted by the Council on Pharmacy and Chemistry of the American Medical Association on Jan. 1, 1943. Cloth. Price, postpaid, $1.50. Pp. 772. Chicago: American Medical Association, 1943.

The current volume of New and Nonofficial Remedies continues, with minor improvements, the convenient and informative system of classification adopted for the 1942 volume. The terminology of the official drugs has been revised to conform to the U.S.P. XII and the N.F. VII. One notes that the valuable bibliographic index now appears on white instead of "India Tint" paper, a wartime necessity no doubt. This index appears before the general index which is now more properly placed at the end of the book. To one accustomed to the old format of New and Nonofficial Remedies the new arrangement appears at first somewhat awkward but with a little use the wisdom and convenience of the changes becomes more and more apparent.

Textual changes and revisions do not appear to be as numerous as in some previous editions. The chapter, Digitalis and Digitalis-like Principles and Preparations, has been extensively and somewhat radically revised to keep pace with the changing attitude toward this drug. It is understood that in this revision the Council had the aid of the foremost digitalis authorities, pharmacologists and clinicians alike. Other revisions have been made obviously to keep the book up to date with medical knowledge. To cite a specific revision indicating the increasing skepticism of the Council concerning a drug, it is interesting to contrast the following sentence in the 1942 general article on Chaulmoogra Derivatives, "The therapeutic properties of chaulmoogra oil appear to be due to these optically active unsaturated fatty acids of the chaulmoogric series" which in the 1943 edition reads "Any therapeutic properties chaulmoogra oil may possess would appear to be due to these optically active unsaturated fatty acids of the chaulmoogric series."

No such spectacular new additions as the appearance in a previous volume of the sulfonamides is to be noted. Among the more noteworthy of the new additions are Nikethamide, the central nervous system stimulant which was first introduced as

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Keep Medicine Out of Politics

Today, organized medicine is beset upon many fronts by evils which seek to disrupt all that is good and worthwhile in the practice of medicine. As we observe the radical forces which seek to force a place for themselves in our social makeup, we cannot but marvel that such influences should find nourishment in the American soil of free enterprise and individual industry.

In recent years, civilization in general has been subject to radical socio-economic and political reforms. Many nations have initiated new forms of government in a misguided attempt to right age-old evils.

As yet, the practice of medicine in this country has been relatively unaffected by the social philosophies which are rampant. True, new ideas and new methods have been put to work in isolated instances, but, in general, medicine has been able to avoid—at least for the present—the evils of socialization.

But the menace remains. The hue and cry for socialized medicine continues with unabated vigor. The situation presents a challenge to organized medicine to cooperate with every means available in the combating of its problems.

—Lanning E. Likes, M.D., in *Rocky Mountain Medical Journal.*

Doctors' Great Service

Those who are disposed to complain because the army and navy are taking so many doctors away from civilian practice will probably reverse their thinking when they realize the great service the absentees are rendering the defenders of their country.

Reports from the front say that about 97 per cent of the wounded recover, and most of them eventually are able to return to active duty. In former wars death rates among the casualties have run as high as 70 per cent.

Our health at home may suffer a little, but we can well afford to make the sacrifice for the benefit of those who fall on the battlefield.—*Bay City Times.*

Zemmer

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TUBERCULOSIS ABSTRACTS

(Continued from page 283)

Many state agents and supervisors have learned that, as the Federal manual points out, direct interview between physician and rehabilitation worker is the most satisfactory procedure for both.

A number of the state and local tuberculosis associations have included rehabilitation in their program objectives. Some have employed special personnel competent to assist the patient in finding his way to appropriate training or placement or both. Rehabilitation workers employed by voluntary agencies are well aware that the patients of private physicians may have as much need for their services as the sanatorium graduate. The physician may find it well worth while to inquire from the nearest tuberculosis association what it has to offer in the direction of rehabilitation.

Both official and voluntary resources have been stimulated and encouraged by changing attitudes within industry. Not manpower shortage alone, but a cumulation of satisfactory performance by former patients, has done much to improve this situation.

The nation's leading personnel agency, the United States Civil Service Commission, has conducted surveys of jobs in several types of Federal services and in war-contract industries in search of jobs suitable for physically handicapped persons. Prospective employment for persons with a history of tuberculosis has been conspicuously included.

This precedent has been matched by action on the part of the National Association of Manufacturers. In the December, 1942, supplement of its Industrial Relations Bulletin, the N. A. M. indicated that various handicapped groups are a new labor source. Specific mention is made of employees who have suffered amputations, deafness, blindness, organic heart diseases and tuberculosis. For each group, a partial list of suggested jobs is offered. The bulletin indicates that one of the parallel practices in employing handicapped workers calls for "careful selectivity in applying the handicapped man to a job which he can do." Again the private physician and the industrial doctor are able to provide medical advice and counsel. A number of large employers have recently utilized the specific job-analysis method developed by the United States Employment Service, described above.

Tuberculosis literature is not without its contributions on rehabilitation information of value to the physician. The American Review of Tuberculosis

has in preparation articles prepared by the United States Employment Service, and the Federal Vocational Rehabilitation Bureau regarding their procedures in cases eligible for their services. The Rehabilitation Service of the National Tuberculosis Association is preparing special releases on the subject of patients not eligible for official services. Thus, the physician, when called upon to advise his patient occupationally, may utilize the services and the publications of the United States Employment Service, the Rehabilitation Bureaus and the tuberculosis associations to good advantage.

Written especially for Tuberculosis Abstracts, by F. L. Jennings, M.D., Supt. and Med. Dir., Sunnyside Sanatorium, Indianapolis, Ind.

CHANGE IN CASEC MEASUREMENTS

Casec now measures six *packed* level tablespoonfuls instead of 12 level tablespoonfuls, as formerly, so that directions to the patient should be amended accordingly. Casec is indicated in colic and loose stools in breast-fed infants, and in fermentative diarrhea, malnutrition, celiac disease and for premature infants. Mead Johnson & Company, Evansville, Indiana, U.S.A.

Doctors in the War

TWO MORE DOCTORS COMMISSIONED

Dr. Uel C. Lovejoy, of Omar, and Dr. Louis E. Baron, of Mannington, have accepted commissions in the Army, according to information reported to the headquarters office of the West Virginia State Medical Association for the period from June 22 to July 22, 1943.

The Physician and the War

This has been a year of considerable stress to all medical men. Many of us are in the armed forces, far from home enduring the rigors of military life, suffering innumerable hardships and deprivations. Those of us who are staying home are also working under difficult conditions. Our practices have increased to a point of supersaturation; hospitals and nursing facilities are frequently inadequate. Most of the men on the home front are above 45 or have physical disabilities. In spite of this, we are constantly called on to assume ever-increasing burdens and responsibilities which we cheerfully accept.—*Westchester* (N. Y.) *Medical Bulletin.*

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ENTERED AS SECOND-CLASS MATTER, JANUARY 1, 1926, AT THE POST OFFICE AT CHARLESTON, WEST VIRGINIA

Vol. XXXIX September, 1943 No. 9

MEDICAL ASPECTS OF HYPERTENSION*

By IRVINE H. PAGE, M. D.
Indianapolis, Indiana

Hypertension is now recognized as the chief cause of death in this country. This fact is being driven home by the discovery of a great number of individuals with hypertension, on examination by the army and navy medical staff. The number of men who are rejected or are being retired from the armed service because of this disease is appalling.

Widespread investigation into the nature of hypertension does not go back many years, and by the same token much remains to be discovered. Nevertheless, certain fundamental changes have occurred in our thinking in the past ten or more years which inevitably will affect bedside practice in the understanding and management of patients with hypertension. These changes in thinking are important, and for this reason, I will list four of them that I consider especially so:

1. It has come to be realized finally that hypertension serves no useful function to the body and that it is not necessary that arterial pressure be elevated in order to insure efficient renal function, even though the vessels may be narrowed; nor is it necessary to maintain adequate perfusion of peripheral tissues. Hence, arterial pressure can be lowered without interfering with bodily function. It should not be forgotten that the opposite was the common teaching not long ago.

2. A second change is the realization that hyperactivity of the nervous system is not the primary cause in the majority of cases of arterial hypertension though it may play an important part. Most work supports the view that a chemical substance liberated by the kidneys elevates the blood pressure. The nervous system undoubtedly mediates the demands of the body for quick changes in blood distribution, but the slow, prolonged changes are caused by humoral agents. There is good reason also to believe that the nervous system is concerned with the maintenance of

THE AUTHOR

Dr. Page, graduate Cornell University Medical College; Lilly Clinic, City Hospital (Indianapolis), since 1937; American Heart Association; American Biochemical Society; American Physiological Association; Harvey Society; Society for Experimental Biology and Medicine.

*Presented before Kanawha Medical Society, Charleston, West Virginia, June 8, 1943.

the reactivity of the body to humoral agents.

3. A third change of great importance is the demonstration that while renal excretory function may be normal in patients with hypertension, profound changes in the distribution of the blood within the kidneys may have taken place. It is incorrect to define essential hypertension as a condition in which renal function is normal; renal excretory function is, but other renal functions are not.

4. A fourth change is the elaboration of methods which reproduce with fidelity hypertension in animals. The two methods now in common use are compression of the main renal artery by means of clamp, and compression of the renal parenchyma by the scar resulting from perinephritis induced by wrapping the kidneys in cellophane, silk or other types of cloth. These methods which have made possible extensive studies into the mechanism of hypertension could not, for the most part, be carried out in human beings.

I need not argue the point that recognition of these fundamentals of hypertension has taken place. Much of the knowledge has not been fully apprehended by clinicians, nor has it found application at the bedside.

MECHANISM OF HYPERTENSION

Without going deeply into the fundamental investigations involved, let me give you a thumbnail sketch of our views on the mechanism of hypertension. We think that reduction in pulse pressure and possibly temporary drop in blood flow may start the renal vasopressor system into action. What is responsible for this change in pulse pressure we do not know. An enzyme called renin is contained in the renal tubular cells and this is liberated into the blood stream. It acts on the Alpha-two globulin of the plasma to form a third substance called angiotonin. The globulin incidentally has its origin in the liver. Angiotonin apparently is the substance causing the rise in blood pressure. I want you to note particularly that the rise in blood pressure in both essential, experimental and angiotonin hypertension is of a very special sort. It is characterized by augmentation of the force of the heart beat — hence, the overactivity and enlargement of the heart seen at the bedside; by constriction of the peripheral arterioles without reduction of blood flow—hence, the skin and muscles are not pale and bloodless. The changes in the kidneys are peculiar and interesting. In short, the principle change seems to be constriction of the small arterioles proximal and distal to the glomeruli which results in increased pressure within the glomerulus and reduction of peritubular blood flow. This result is an artificially elevated urea clearance and reduced ability to concentrate urine, a point of considerable clinical usefulness. Maximal ability to concentrate urine is much the most sensitive of the common tests of renal efficiency in patients with hypertension. More recent work shows that the intrarenal hemodynamics can be more accurately investigated by the inulin and diodrast clearances. Suffice it to say that the former measures glomerular filtration and the latter tubular secretion. In view of the changes of blood distribution I have mentioned, it is clear why these tests have assumed a place of importance in clinics devoting their time to research on cardiovascular disease. Perhaps we had better term it "angiology", a more inclusive term when one considers that the heart is only a specialized portion of the vascular system.

INTENSITY OF HEART STIMULUS

With these notions in mind, it is not difficult to transfer them to clinical practice. For instance, the increased force of the heart beat is most readily appreciated by the hand placed over the precordium. When one has familiarized himself sufficiently with this procedure, a great deal can be learned about the intensity of the stimulus to the heart and its response. Both influence the final outcome, especially as regards the myocardium.

The special type of arteriolar and small arterial constriction can be seen and studied in the eyegrounds. Thus, examination and thorough familiarity with the ocular fundi is essential to the proper evaluation of any patient with elevated blood pressure. There

is no substitute for the careful and repeated examination by the internist himself. This is the place where the intensity of the vasoconstriction may be measured, the earliest signs of degenerative changes detected, and the signs of necrotizing arteriolitis, papilloedema, retinal edema and detachment, thrombosis, etc., first noted. If I were required to give up all examinations but one during the investigation of a patient with hypertension, I would retain the pleasure and privilege of examining the eyegrounds.

There are many other clinical applications of these principles but these examples will, I hope, illustrate my meaning. The adequate examination and "pedigreeing" of these patients has now become an elaborate procedure in contrast to the examinations given only a decade or more ago, and at the same time marked improvement in the accuracy of prognosis and diagnosis has occurred. We hope it is also leading to much more convincing results obtained from observation of experimental treatments. As you are aware, many of the claims made for treatments were not made dishonestly, but the observer was fooled by the natural variability of the disease. There is less and less reason for such mistakes in the future.

Treatment of hypertension is still an experiment. Practicing physicians are naturally anxious for a practical means of dealing with this disease and are sometimes impatient with the bungling efforts of investigators. Brother investigators are with less reason impatient and deserve a gentle but firm rap on the knuckles for it. Impatience leads to forced conclusions rather than the truth.

At the Lilly Clinic, we believe that when the operation is adequate, sympathectomy has its place in the management of patients with hypertension. Its good effects are not due to increased blood flow in the kidneys. Selection of these patients requires care and experience.

Thiocyanate is also a useful drug in our experience, which now covers some 500 patients. As you know, it should not be used without chemical control and should not be given merely to be giving something. Some patients do not respond favorably and its use in those individuals should not be continued.

We have tried large doses—in fact double the dose recommended—of vitamin A in patients but found no change in blood pressure in our "pedigreed" patients. We would not say that when the material is given in even larger doses or over longer periods of time that it is without effect. It may well be that impurities play some part when excessively large doses are employed. Vitamin A or some associated impurity can at times increase renal blood flow and also increase tubular efficiency. We have not tried it in dogs but Wakerlin recently published the statement that it lowered blood pressure in dogs with experimental hypertension much as did renin.

TYROSINASE

We have had no experience with tyrosinase. Schroeder thinks that it reduces blood pressure because of the enzyme in the solution. Apparently others think this also while still others consider the results purely a result of impurities other than tyrosinase.

So-called "nonspecific" therapy has been used for many years with occasional good results. The term itself is almost meaningless and might well be dropped but its use is so current that this would be difficult. Typhoid vaccine given intravenously to patients with renal disease may cause serious loss of renal function. We doubt if it should be given by vein at all as a therapeutic measure in renal disease.

There is some physiological evidence to suggest that the kidneys contain an antipressor agent, hence the search for it. To date it has been shown I think, that kidney extracts of special sorts can lower blood pressure, reverse many of the retinal changes of the malignant syndrome and alter the change in distribution of blood within the kidney towards normal. I have no idea how kidney extracts work or whether they are "specific" or "nonspecific." Most of our recent work suggests that the enzyme "angiotonase" is not the antipressor substance.

SOCIAL PROBLEMS OF GYNECOLOGY AND OBSTETRICS*

By ALAN F. GUTTMACHER, M. D.
Baltimore, Maryland

THE AUTHOR

Dr. Guttmacher, graduate Johns Hopkins University School of Medicine; Associate Professor of Obstetrics, Johns Hopkins; Chief of Obstetrics, Sinai Hospital, Baltimore, Md.; Diplomate of American Board of Obstetrics and Gynecology.

REPRODUCTION, with its satellite medical specialties, gynecology and obstetrics, occupies a unique position in the medical firmament. Instead of being governed by a single discipline — science — it has two exacting masters, science and religion. Religion continues to assert a somewhat outmoded but vigilant stewardship over man's painful entrance into this world, as well as his painful exit. This jealous interest of the spiritual with matters biologic creates many anomalous situations. For example, we insist upon a grade 3 cardiac giving up factory work, and the social service department finds her a less strenuous occupation. At the same time we warn against one of the hardest physical strains—childbirth. Yet in many communities, even in whole states, like Connecticut and Massachusetts, it remains unlawful to provide medical means to execute this warning. Again, if a child is beset by a group of ruffians and a bullet lodged within her body, she may go to any doctor or any hospital and have it removed. Yet if this same child is raped and a cruel pregnancy lodged within her uterus, nothing may be done.

One of the most interesting things about the art of midwifery, as our English allies belittlingly term obstetrics, is its broad base and many ramifications. No other medical specialty has so general a vista. The obstetrician must be a minor authority on many subjects. He has intimate contact with medical and pediatric problems, among which we may mention the toxemias, chemotherapy, the management of cardiac disease in pregnancy, resuscitation of the newborn and proper nursery procedures. He must be an authority on surgical problems as well: aseptic technique, postoperative care, the choice of proper suture materials, and the selection of anesthetics. His specialization does not end here, for he is the doctor who has closest contact with the medicalsocial issues brought about by contraception, abortion, sterilization, artificial insemination and the humane extermination at birth, of those few infants who are hopeless, congenital wrecks. To all engaged in obstetrical work these matters which so intimately affect the soul, the mind and the body of the patient present recurrent problems, problems largely fabricated from the dual authority of science and religion. For the next half-hour, I shall try to discuss some of these matters with frankness and fairness, and I hope without too much bias.

LIMITATION OF OFFSPRING

It is likely that even before recorded time, man, under the exigency of circumstance, made efforts to limit the number of offspring. These attempts probably began when humans first became thinking anthropoids, when they realized that an additional hungry mouth would spell doom to others in the family unit. The cave couple, with periods of famine and starvation alternating with periods of plenty, used a simple solution consistent with their primitive experience. Not knowing fully the source of a new life they could not adopt means to prevent its creation for, according to E. S. Hartland, in his book, "Primitive Paternity", man did not begin to realize that coitus lead to babies until he was far along on

*Presented before the seventy-sixth annual meeting, West Virginia State Medical Association, Charleston, May 18, 1943.

his sophisticated path. Events more unusual than sexual congress, such as a meteor or a bolt of lighting, were used as explanations for so dramatic a happening as conception. This thesis was confirmed in 1929 by Malinowski in his researches among the Trobiand Islanders. According to their theory, an initial coitus was necessary to open the woman up, but after this first act, annual models could be born without further cooperation by the male. Not knowing the source of conception the cave man could not prevent it and he therefore mimicked the animals about him and killed or deserted the unwanted infant; in time of dire famine he probably even ate it.

CONTRACEPTION

When man became more sensitive and wise, infanticide became repugnant. As soon as he learned the coital source of a new life, under certain circumstances he took prompt steps to attempt to prevent conception. At first conception control was mainly magical, but later it became rational. The earliest medical documents extant, the Egyptian papyri, have sections devoted to contraceptives. The earliest of these, the Petri or Kahun Papyrus, written thirty-eight hundred years ago, gives three prescriptions. The first consists of crocodiles' dung mixed with a pastelike vehicle, and is probably a pessary for vaginal insertion. In the second the vagina is plugged or irrigated with honey and natron, a native sodium carbonate. The third mentions a gumlike substance for insertion in the vagina.

The case of poor Onan, reported in the thirty-eighth chapter of Genesis, proves that coitus interruptus was practiced by the early Hebrews. Some of us may assume that his tragic case history was included in order to discourage a common practice, sufficiently common to cause the Rabbis concern over its effect on the birth rate. As you remember, God slew Onan because he impiously "spilled his seed upon the ground."

The use of an occlusive vaginal sponge was known to the authors of the Talmud, the postbiblical compilation of Hebrew lore and law, written fourteen hundred years ago. In fact the use of the sponge was restricted by the Rabbis to three instances: in the case of a minor because she might become pregnant and die, in the case of a pregnant woman because the fetus might become a sandalium (literally a flat fish, what we term fetus papyraceous), and finally in the case of a lactating mother because another pregnancy might kill her nursing child.

ABORTIVES

Differences of opinion in regard to the propriety of doctors prescribing contraceptives can be traced back at least eighteen hundred years. Soranus of Ephesus, the remarkable Greek physician who practiced and wrote in Rome during the second century A. D., plainly states that there were then, as now, two schools of thought in regard to the matter. While discussing abortives, he wrote:

"A controversy has arisen. For one group banishes abortives * * * because it is the specific task of medicine to guard and preserve what has been engendered by nature. The other party prescribes abortives, but with discrimination, that is, they do not prescribe them when a person wishes to destroy the fetus because of adultery or out of consideration for youthful beauty, but only to prevent future danger in parturition if the uterus is small * * * or if its orifice has knobby swellings and fissures. And they say the same about contraceptives as well, and we too agree with them. And since it is safer to prevent conception from taking place than to destroy the fetus, we shall now first discourse upon such prevention." This is followed by several pages of contraceptive information, including the use of the safe period. He wrote: "Beware of having sexual intercourse at those periods which we said were suitable for conception, that is, when menstruation is beginning or abating." His safe period was quite at variance with the modern Ogino-Knaus scheme.

I trust that this excursion into the historic has proved two points. First, that attempts

at conception control through the use of contraceptives is one of the most ancient of medical practices. Second, that for at least two thousand years there have been opposing schools: physicians who condemn contraception and physicians who commend it, at least when the proper health indication exists. These two points may have been well known to most of you, but there are many doctors who are prone to believe that contraception, abortion and the other medicosocial problems under discussion are brand new inventions of the twentieth century, nay even of the New Deal.

PRESENT STATUS

What is the present status of contraception? There are three distinct medical opinions, each held by men of equal integrity and decency, a fact often forgotten in the heat of controversy.

The physicians of the first group sincerely believe that all artificial contraceptive practices are immoral and medically unwarranted, though the use of the safe period is quite all right. The vast majority holding this opinion are activated by religious conviction. There is one point in regard to this view that is difficult for a non-Catholic to grasp. If one recommends and expounds the safe period, isn't it confession of agreement with the principle of contraception—cohabitation with the likelihood of procreation removed? Philosophically, what difference is there if the artificial means employed is the calendar or the condom?

Those of the second group approve of contraception and recognize it as an essential modern therapeutic agent. However, they feel that the free or part-pay clinic should be restricted to those patients who have a definite indication for temporary or permanent respite from childbirth. Dr. Eastman, my chief at Hopkins, and Chairman of the National Medical Council on Birth Control, is strongly of this opinion. He approves of giving contraceptive advice to the following groups of married women only:

1. Women with an organic disease as attested by a reputable physician. By organic disease is meant: chronic hypertension, rheumatic heart disease, active or recently active pulmonary tuberculosis, diabetes mellitus, syphilis, chronic pyelitis and similar conditions in which definite disease processes are demonstrable.
2. Women who have given birth to defective children or who are suffering from a disease known to be hereditary.
3. Women who have been delivered by cesarean section or who have undergone a major surgical operation during the previous year.
4. Women who have given birth to an infant within the past two years or who have had an abortion within the previous year.
5. Women who have three or more living children.
6. Women who are suffering from economic distress as attested by investigation.

The physicians of the third group subscribe to Dr. Eastman's tenets in theory, but believe them too restricted to be practical. Since they realize that any married woman, unless she resides in Connecticut or Massachusetts, can get adequate birth control information from private physicians irrespective of medical or economic urgency, if she possesses ten or twenty-five dollars and sufficient savoir faire to know what doctor to select. The question, as this third group sees it, is: "Should contraception be a matter of financial privilege?" They feel that the answer should be no, and therefore advocate a freer policy of clinic admission. They feel this particularly now, in the midst of a war to preserve the democratic way. Why shouldn't the poor and rich, the sophisticated and unsophisticated, have equal opportunity to choose the size of their family unit?

ABORTION

The second medicosocial problem I wish to discuss is the problem of abortion.

Historically, two facts stand forth about abortion. One, its venerable antiquity. The description of an abortifacient has come down through forty-six hundred years in the oldest

known Chinese herbal and that abortifacient is mercury. Another proof of abortion's antiquity is its absolute universality, which, according to anthropologists, is an indisputable hall-mark of social age. There isn't a continent or an island, a nation or a tribe, in which it was not and is not practiced. No social study is complete, whether of the African bushmen, the Esquimaux or the residents of Framingham, Massachusetts, unless the incidence, methods and modes of abortion are discussed.

The other historical fact is that abortion is an endemic plague which never has been and never can be legislated away. The practice has been accepted by all men and all religious groups, except by the Jews and Christians, since time immemorial. Philosophers as great as Plato and Aristotle advocated abortion. Plato desired that his republic should not consist of more than 5,040 citizens, this restriction in population to be achieved by a limitation of births. He wished to make obligatory the abortion of any woman who conceived after her fortieth year.

As has been said, the Jews disapproved of abortion and, according to Josephus, their law prescribed punishment for the women who were guilty of the crime; however, the Jewish attitude was not so clear-cut, nor Judaism's influence so profound as Christianity's. Christianity not only denounced the practice but classed it as murder, and because the fetus died unbaptized an immortal soul was destined to eternal damnation. In addition to the Church's condemnation, the State has made abortion a punishable felony in all Christianized lands. Previous to the nineteenth century abortion was penalized as a misdemeanor under the common law, but beginning with England each nation now has specific statutes dealing with it as a felony. In the United States the Comstock Act of 1873 made the shipping of materials or literature which furthered criminal abortion a federal offense. In addition each State has a statute specifically penalizing the performance of a nontherapeutic abortion.

The law is definite and the attitude of the two great religions clear. What is the result? At least 500,000 criminal abortions in this country each year, according to Dr. Frederick Taussig, the medical authority on the problem. Dr. Dunn, chief statistician to the Census Bureau, estimated the number at 350,000. The only difference is whether we are decimating a population the size of Buffalo or Cincinnati. Furthermore, who knows whether these estimates are accurate? The true figures may be twice as large.

Who have criminal abortions? The studies in England and this country are in agreement: 85 per cent of the women are married, 12 per cent are single, and 3 per cent are widowed or divorced. Most of the married women are already the mothers of several children.

Who performs the abortions? They are done by four types of operators.

THERAPEUTIC ABORTIONS

The first, lamentable as it is to admit, are you and me, all of us reputable, ethical physicians. However, we disguise our performances under the misnomer of therapeutic abortions. These patients are a privileged class and relatively few in number; perhaps the wife of a medical colleague, or an old obstetrical patient whose minor abnormality is stressed and stretched until it appears to be a life-threatening lesion. A girl, the wife of a doctor, who has a 6 month old baby and who is fifteen pounds underweight, is found to be suffering from grave malnutrition which may be pretuberculous in character. Another woman, the well-born, attractive mother of three children, had cholecystitis during a previous pregnancy and her reputable medical man deems abortion necessary because of this, and the fact she is tired, run down (and doesn't want the baby). I am not criticizing you or me, I am simply trying to give a truthful survey of the abortion problem.

The second type of operator is the professional abortionist, a medical graduate, often with a year or two of internship. These full time medical abortionists are usually

rather simple, mediocre men who have drifted into the business through the press of financial urgency. One whom I know was the chief physician of a large automobile factory and when the pre-Rooseveltian depression came he was unceremoniously dismissed. He found himself stranded, with no money, no debts and a wife and four children. A second had a divorced wife and two children, when he became mixed up with another woman. A struggling nose and throat practice plus a little remuneration as physician to the Public Athletic League was not sufficient. And so the story goes.

Many of these full time medical abortionists are competent and have a certain pride in the excellence of their work. This is not true of the part time medical abortionist, that despicable physician with a holier-than-thou sanctity, who does abortions to supplement his legitimate medical income. These operators are often extremely incompetent and careless.

The secrecy under which medical abortionists have to work varies from city to city. In one large Eastern city, the names of the two leading abortionists are more widely known than that of the local Methodist Bishop or the baseball manager.

LAY GROUP

The third group of abortionists is the lay group, recruited largely from midwives and druggists. They are a real menace, and responsible for a fair share of the mortality. Their only saving virtue is that their fees are low.

The fourth class of abortionist is the woman herself, often aided by a sympathetic neighbor. All kinds of tools are used: bougies, slippery elm sticks, sea-tents, hatpins, goose quills, knitting needles, etc. The total criminal abortion mortality estimated by Taussig as 1.2 per cent, is probably largely from this source.

It is safe to say that if valid statistics could be gathered criminal abortions would prove to be the chief cause of death to the pregnant woman. Taussig estimated the annual army of dead at 8,000. Probably since the introduction of the sulfonamide drugs its size has been somewhat reduced.

What are we physicians doing about it? We spend large sums of money and much effort each year in attempting to solve the toxemias of pregnancy which killed 1,930 women in 1940, and yet we devote little thought or effort to a pestilence more than three times as lethal.

LAISSER FAIRE ATTITUDE

What is responsible for this laisser faire attitude? One reason is that our moral sense is shocked, and we feel that women who resort to criminal abortion are due the just desert—hardly the medical point of view. We do not regard the stupidly-eating, vitamin starved, pellagra or beriberi victim in the same way. A second cause of this laisser faire attitude is the seeming insolubility of the abortion problem. Many feel that all that can be done is to do what we are doing, that is, to express disapproval by outmoded laws which are almost unenforcible and for which enforcement is rarely attempted.

The only suggestion I can offer is a nationwide, scientific, amoral inquiry into the true facts about abortion. When facts are known let the physician, the social worker, the clergyman and the judge sit around the conference table and dispassionately evolve a workable, enforcible program. The agenda for such an investigation must include: true incidence; the morbidity and mortality for abortions done by each of the four classes of operators; the reasons why women resort to abortion and the ways to remove these causes; the special problem of the illegitimate pregnancy; the control of drug stores as dispensaries for ecbolics, bougies, etc.; the unmasking of medical hypocrisy in regard to abortions; and the liberalization of indications for therapeutic abortions.

For example, I feel that proved rape, or impregnation of a minor through incest are crying indications for legal termination of pregnancy. Several years ago a 12 year old girl turned up in the Johns Hopkins Dis-

pensary with a 4 month pregnancy through paternal incest. The chief of service at this time agreed to do a therapeutic abortion if a court order could be secured. I went to the Maryland State's Attorney who said that he would agree not to prosecute us, but that he could not issue a court order for abortion since such an action would be highly illegal under the Maryland statute. This did not satisfy the obstetrician in charge and the child later gave birth to her own brother.

Courageous Dr. Alec Bourne clarified the English situation in 1939, I believe. A 16 year old girl who had been raped by three soldiers, was aborted by him on one of the wards of a London public hospital. He immediately reported himself to the Crown's councils and requested that he be arrested. This was done and trial before a jury lasted three days. The government's lawyers contended that Dr. Bourne had flagrantly broken the abortion statute which granted the right of therapeutic abortion only if continuation of pregnancy jeopardized the life of the mother; the girl in question was healthy and sound of body. Dr. Bourne's counsel claimed that there was a mental and emotional life in addition to the physical life, and that the former would be jeopardized by continuation of pregnancy. The jury sustained this interpretation, acquitted Dr. Bourne and established a precedent for all of England. Such a favorable test would do far less good here, for it would simply liberalize the law in a particular state and each state would have to have its own test case in turn.

With so few scientific facts available, I am in no position to make any specific recommendations about the abortion problem. Again I urge—let us find the truth, ungarnished by religious and moral bias and then let us act. I beg for intelligent action, not a continuation for eternity of our passive connivance with criminal abortion.

EUGENIC STERILIZATION

Eugenic sterilization is a relatively recent procedure. The first cases were those done in 1898 by Dr. Sharp of Indiana, who vasectomized 200 feebleminded, epileptic boys. Since 1907, the various States have enacted separate laws governing this practice. The most elaborate program of eugenic sterilization is that begun by Germany on January 1, 1934. Her law requires that any person "hereditarily ailing" must be deprived of the right of procreation. She might well have considered Judaism or catholicism an hereditary ailment, for, after all, little is so clearly hereditary as one's religion, yet she did not and, from all I gather, the law has been justly and fairly administered. During the years from 1934 until the war, more than 100,000 Germans were sterilized on eugenic grounds.

My objection to the German law is based on the fact that it makes eugenic sterilization compulsory. A person can be grabbed by the nape of the neck and compelled to have such an operation. I believe in voluntary eugenic sterilization; compulsory sterilization does not agree with the American way of life. I think that we should persuade the genetically undesirables, through education, to seek and accept sterilization. By such a scheme we would do a few less sterilizations, but this is a small price for preserving personal liberty and the right of free choice.

ARTIFICIAL INSEMINATION

Artificial insemination, according to legend, was first done by the Arabs in the fourteenth century. It is said that men from a warring tribe stole into the enemy's camp and artificially inseminated the full-blooded mares with semen from a broken-down, common stallion. This would be much like watering the enemy's gas in the mechanized war of today. Jacobi artificially inseminated the eggs of fish in 1600, and Spallanzani a bitch in 1782.

John Hunter was the first physician to practice artificial insemination upon a human; this was at the end of the eighteenth century. His patient was the wife of a man suffering from hypospadias. The husband collected his semen and it was injected shortly thereafter into the wife's vagina, and she became preg-

nant. The great Marion Sims of vesicovaginal and duck-billed speculum fame was also a pioneer in the field of artificial insemination. He made fifty attempts in 6 patients and obtained one pregnancy.

In the modern treatment of sterility, there are two types of artificial insemination: when the husband's semen is used (homologous) or when the semen of a fertile, unrelated donor is substituted (heterologous). It is the latter type only which raises any social issues.

There are two schools, one led by Francis Seymour of New York, which thinks that all kinds of unsurmountable legal safeguards should be thrown about the procedure; and another which feels that heterologous artificial insemination should be done only for the couple of exceptional intellectual and ethical capacity, and with this restriction legal safeguards become unnecessary. Dr. Seymour insists on signed papers in duplicate from the recipient, her husband, the donor, and his wife. Furthermore, the blood groupings of the supposed father and the biologic father must be the same. To me, such complicated behavior robs artificial insemination of any advantage over adoption. It should be simple and matter of fact, without telltale signatures, so that, psychically, by the time the baby is born, the parents have to pinch themselves to realize that it was not conceived in the ordinary manner. Perhaps this point of view is not strictly legal, but it is eminently humane.

EUGENIC INFANTICIDE

Many progressive minded, thinking couples are demanding the extinction of any infant born to them who is hopelessly malformed or otherwise abnormal. This was taught me early in my practice when one of Baltimore's newspaper editors, who is now the president of a large Western university, barged into my office, introduced himself and said he had come to exact two promises from me. I gave a guarded answer until he told me what they were. He wanted me to promise, first, to do a cesarean section on his wife (his reading had lead him to believe that this was the less painful and safer way to have a baby), and second, to extinguish his child's life if the child was seriously abnormal. I refused to grant his first request, but agreed to the second. Fortunately, his wife had an easy labor with a normal child.

The various attitudes about eugenic infanticide by doctors of equal accomplishment and integrity, was demonstrated in staff conference at Johns Hopkins several years ago. An infant with a hopeless spina bifida had been born deeply asphyxiated and there was the question as to whether or not we should have tried to resuscitate it. Five members of the senior obstetrical staff were present; two of them felt that the same attempts at resuscitation should have been made as if the infant were normal, (for a physician's responsibility is to preserve life under all conditions and circumstances), two felt that nothing should have been done; let nature take its course spontaneously, and one felt that positive measures should have been taken to guarantee that the child should not survive.

In closing I reiterate the hope that I have not given offense to any of you. In response to your kind invitation, I felt it my responsibility to present the medicosocial problems facing the obstetrician with frankness and fairness. I trust I have done so.

MILK CURDS

It is common practice in infant feeding to modify cow's milk to give a soft, finely divided curd in the stomach since the belief is widely prevalent that soft curd milk is more digestible. This belief has not been supported in the case of 10 to 13 year old children by the work of Hadary, Sommer, and Gonce (*J. Dairy Sci.*, 26, 259, 1943). They studied the gastric emptying time by roentgenograms and by tested homogenized scopic examinations, and tested homogenized pasteurized whole milk, chocolate milk, diluted evaporated milk, and the usual pasteurized milk. The stomach or colonic emptying time was found to be independent of the curd tension of the milk. This conclusion cannot be extended *a priori* to individuals with gastrointestinal abnormalties or to infants.—Nutrition Reviews.

CITIZENSHIP AS RELATED TO LICENSURE *

By WALTER E. VEST, M. D.
Huntington, West Virginia

No calling, not even the priesthood, touches more closely the warp and woof of society, the actual life and moral fiber of the people, than does medical practice. The patient looks upon his physician as a father confessor. He brings all his troubles, physical and otherwise, to the man of medicine and, when he comes for relief, lays bare to the doctor his inmost soul. Thus intimately touching the life of his clientele, the physicion wields an influence more far-reaching than that of any other profession or calling. His influence is vast, and if through choice or ignorance he uses it for ill, it may be destructive beyond calculation.

The right of the state to regulate the practice of medicine under the state police power has been upheld too often by the various courts of the land to be questioned now. Mr. Justice Field of the United States Supreme Court, when he handed down the famous *Dent v. West Virginia* decision, pointed out that to restrict the practice of professions connected with the public welfare to properly qualified persons is a police power function which does not violate the due process clause of the Federal Constitution. Said the court:

"It is undoubtedly the right of every *citizen* (italics ours) of the United States to follow any lawful calling, business or profession he may choose, subject only to such restrictions as are imposed upon all persons of like age, sex, and condition. * * * But there is no arbitrary deprivation of such right where its exercise is not permitted because of a failure to comply with conditions imposed by the state for the protection of society. The power of the state to provide for the general welfare of its people authorizes it to prescribe all such regulations as in its judgment will secure or tend to secure them against the consequences of ignorance and incapacity, as well as of deception and fraud. * * * The nature and extent of the qualifications required must depend primarily upon the judgment of the state as to their necessity. If they are appropriate to the calling or profession, and attainable by reasonable study and application, no objection can be raised because of their stringency or difficulty."

THE AUTHOR

Dr. Vest, graduate Medical College of Virginia; interned Memorial Hospital, Richmond; Chief Medical Service, Chesapeake & Ohio Hospital, Huntington.

In regulating a profession the state protects its citizens from the ignoramus, the imposter, and the incompetent. It guarantees to the public that the profession will admit only those who can be trusted to render beneficent service, and whose total professional acts will tend to the general welfare.

In the interest of public health, the state must necessarily set up professional medical standards. The common weal demands such a procedure, and likewise demands that those standards be strict enough to prevent incompetent, insufficiently trained applicants from jeopardizing the health and welfare of the individual patient and of the community at large. The licentiate of a profession that is connected with the public welfare must not be a menace from a technical professional standpoint. He must be not only well trained technically, but he must have a broad preliminary education and general cultural knowledge and training as a basis for his technical scientific education. Witness the premedical educational requirements of the vari-

*Read before the Annual Congress on Medical Education and Licensure, Chicago, February 17, 1942, and reproduced through the courtesy of Federation Bulletin.

ous states, none of which have even been held by the courts to be "unreasonable" or an abuse of the police power.

LICENSING OF ALIENS

The constitutionality of a full citizenship requirement for medical licensure has been discussed pro and con, but the question has never been adjudicated by the Supreme Court of the United States. It is true that under the Federal Constitution a state may not deny an alien the right to follow a "common occupation" under the same conditions that it imposes upon citizens. However, in several instances, under the police power, the right has been denied aliens to engage in the sale of alcoholic liquors, and in at least one instance (*DeGrazier v. Stephens*) two years previous residence in the county where the license was sought has been upheld as reasonable and proper. Likewise licenses have been refused aliens to conduct pool and billiard halls (*Clarke v. Deckebach*); peddling and hawking (*Commonwealth v. Hana*); and auctioneering (*Wright v. May*). In the last instance the limitation was to "only voters of the state." Moreover, the licensing of pawnbrokers has been restricted to citizens (*Anton v. Van Winkle*), and the language of the court in handing down this decision is especially pertinent as to the basis of the classification. We quote:

"It may be judicially known, however, that aliens coming into this country are without the intimate knowledge of our laws, customs and usages that our own people have. So it is likewise known that certain classes of aliens are of different psychology from our fellow countrymen. Furthermore, it is natural and reasonable to suppose that the foreign-born, whose allegiance is first to their own country, and whose ideals of governmental environment and control have been engendered and formed under entirely different regimes and political systems, have not the same inspiration for the public weal, nor are they as well disposed toward the United States, as those, who, by citizenship, are a part of the government itself."

Citizenship as a requirement for admission to the bar is, as far as we are able to ascertain, required by all the states. The reason commonly given for barring aliens from the practice of law is that an attorney as such is "an officer of the court" which requires full citizenship. Another reason assigned is that the practice of law is a privilege and not a right; and the power which grants the privilege, i. e., the state, can deny it to aliens.

The practice of medicine is not an inherent right but a privilege and a franchise in the nature of a property right granted by the state to those who measure up to certain standards and have undergone certain definite standardized training (*Sloan v. Mitchell*). "A license to practice medicine is a privilege or franchise granted by the government, and a refusal to grant such franchise, whatever the reason may be for such refusal, does not constitute a penalty." (*Morse v. State Board of Medical Examiners*).

STANDARDS SET UP BY STATE

Generally speaking, the tendency of the courts has been to uphold a citizenship requirement for those callings which have sufficient bearing on the general welfare of society to demand special training, skill or aptitude. In other words, when an occupation is subject to standardization and licensure by the state, membership in such occupation is a privilege and not an inherent right, and the power granting the privilege, the state, is the judge of the standards and restrictions which best promote the safety and well being of its people.

The state imposes on physicians numerous requirements and duties relating to the public welfare. He who would practice medicine must first undergo a long period of education and training, following which he must submit to examination and registration and receive sanction by the state in the form of a certificate of licensure. Transmissible diseases must be reported. Birth and death certificates must be filled in. Often certificates must be furnished to the courts by attending physicians as to the physical and mental condition

of witnesses and accused persons. The mental capacity of testators is often called into question. Civil damages for personal injury usually depend largely upon the expert testimony of the attending physician. Certification of freedom from disease is, in many states, required for the issuance of marriage licenses. Food handlers must be certified as free from transmissible diseases. In the control of epidemics the closest cooperation is required between the medical profession and various governmental agencies. Finally the physician may at any time be called on to fulfill the duties of the ancient and honorable office of coroner, or he may be summoned by that official to do a postmortem examination and to testify as to the cause of a death. Certainly in the performance of several of these functions the physician is, to all intents and purposes, "an officer of the court," which, as such, demands full citizenship.

FULL CITIZENSHIP REQUIRED

The legislatures of eleven states have enacted laws requiring full citizenship for medical licensure. In seventeen other states full citizenship is required by regulation of their respective examining boards. In only one of these twenty-eight states, Texas, has the requirement been tested in court (*Garcia-Godoy v. State Board of Medical Examiners*). In this instance the court upheld the citizenship requirement as "within the legitimate police powers of the state directed to the furtherance and preservation of public health, safety and morals."

Before this audience it is superfluous to say that American medical practice, medical education, medical ideals and medical ethics are the best the world has ever known. The influx of alien physicians cannot but lower our professional level. Their professional education, ideals and ethics have been acquired in an environment and atmosphere entirely different from ours. Their psychology and their reaction to government differ widely from ours. With rare exceptions their knowledge of our history, our laws, our customs and usages is practically nil. In comparatively few instances do they have the familiarity with our language to understand us fully or to be understood clearly by us. Yet what is more necessary in the every day practice of medicine than a clear understanding between doctor and patient?

HOSPITAL TRAINING

Is it unreasonable to require the émigré physician to attain full citizenship precedent to licensure? I tell you no. He can accomplish this in five years. We require a longer period of training for medical practice of native born Americans, reared in our own way of living. Why discriminate against our own kith and kin? There are many more internships in this country than there are annual graduates from our grade A schools, most of which are open to the unlicensed. A proper distribution of émigré physicians into these hospital positions would not only be of great value to the institutions receiving them but would educate the aliens in American medicine, laws, customs and social practices, and would afford them a means of livelihood and an opportunity to perfect themselves in the use of English. Is the five year waiting period too long to expect of the émigré physician? We think not. He is escaping from a country where, in most instances, he found existence intolerable and is taking up residence in what must be to him by comparison the veritable Promised Land flowing with milk and honey. We dare say not a single émigré would exchange America for the land of his birth despite a five-year waiting period to attain citizenship and licensure. In the fiscal year ending June 30 last, 444 alien lawyers were admitted to the United States although they knew in advance that they could not practice their profession for at least five years. Full citizenship for licensure is not a deterrent for émigré attorneys, and would not be for alien physicians.

Especially in time of all out war, why permit any but full citizens to practice the profession which touches so intimately the lives, health and moral fiber of our citizenry? In what calling could the fifth columnist be

more effective? Why leave ajar the gates of medicine to those who might engage in sabotage, espionage or subversive activities? The practice of medicine is not a "common occupation" but a learned profession, a calling which influences most intimately and most powerfully the health, well being and happiness of the populace generally. Its members are often charged with duties on which the public welfare and the administration of justice depend. Practice of medicine is not an inherent right, but a franchise granted to individuals who attain standards set up by the state for its own protection and the betterment of society. We demand of native born American recruits to our ranks that they be of the highest caliber both moral and intellectual. We require of them long and arduous training. What is more reasonable than to demand of the foreign born seeking admission to our profession that he take time enough to attain full citizenship first; that he spend this time in learning our laws, our customs, our ideals and our democracy, in perfecting himself in the technic of American medicine and the use of our language, and proving his loyalty to the land in which he would dwell and from which he would derive sustenance? The public health and the common weal, the maintenance of our high standards of practice, of our ideals of medicine and medical ethics, yes, even the assurance of the preservation of our American democracy and way of living demand full citizenship as a prerequisite to medical licensure.

DISCUSSION

Dr. Ernst P. Boas, New York, N. Y.: Representing the National Committee for Resettlement of Foreign Physicians, I come, not as a special pleader for foreign physicians but, rather, because we have had great experience with the problems engendered by the immigration of physicians, and because we have been particularly concerned with the citizenship problem.

Many of you have read the recent paper by Doctors Edsall and Putnam on the émigré physician in *The Journal of the American Medical Association.*

All will agree that it is essential to protect the public and maintain professional standards. Yet citizenship is not a measure of professional ability. Medicine is a universal art and science, and the better class of physicians in all countries are equals. Nevertheless, twenty-eight states exclude foreign physicians from licensure on grounds of citizenship, and only citizens can be appointed to federal positions. As a result some 2,000 physicians cannot practice and are deteriorating in idleness.

In times of peace, this situation, while deplorable, was not one of country-wide concern. But today we are at war. You heard from Surgeon General Parran of the great need for physicians in the army and in civil life, and that it would be desirable to enlist foreign physicians in appropriate services.

Medical schools are telescoping courses in order to turn out doctors more rapidly. Medical students are deferred under the Selective Service Act. Use this reservoir of trained physicians for the benefit of our country! Most of them want to serve, but they cannot because they are not citizens.

If we waive the full citizenship requirement for state licensure, and for appointment to federal posts, we will help fill the immediate medical needs of the country.

Of course, we must insist on competence and see that the men are examined and thoroughly qualified. Those who are could be used in non-military services: Public Health Service, Federal Security Agency, Indian Service, Veterans' Administration, and in many state and county services.

It would seem to me a function of this Congress and of the American Medical Association to take measures to liberalize state and national regulations and laws, so that America, in its time of stress, can use these several thousand physicians in the national defense, and so that these physicians can serve their adopted country in its time of need.

Dr. Thomas J. Crowe, Dallas, Texas: If we put those people at work in our communities, as our speaker proposed, we won't know what they are doing. I don't think any man is competent to practice medicine in the United States until he can speak our language. We are in a dangerous situation.

Is his purpose to accept those men and put them in practice? If I understood him, his purpose was to approve their placement either in civil or military practice. The alien physicians can't go into the Army.

Dr. Julian F. Du Bois, St. Paul, Minn.: To me it seems that the citizenship question was raised largely for discussion. You can call it a protective measure, if you wish, but if we go back in licensure to about 1913, I think the committee on medical education said there were too many doctors; that the schools had to be curtailed and the curricula increased, so that we would have fewer doctors.

According to reports up to 1940 we had too many doctors. In the last several years we have had about 12,000 applications annually for medical schools, and our medical schools have taken from 5,000 to 6,000 a year, and specified that we must have class A schools. To the best of my knowledge, there is no evaluating board to go into the credentials of foreign schools.

If you license 2,000 foreigners whose education cannot be verified by the American Medical Association, that is as to the class of school, it seems to me that you are penalizing American boys for being American boys.

Now, the period of stress apparently is forgotten, and, because a foreigner has had some difficulties, it is proposed that he should take the place we prohibited the American boy from having. It is not the established doctor of today that we should worry about. It is the young doctors or the would-be doctors, the boys who want to be doctors. When you talk about putting the émigré physicians in the places of the men who are in the service, and letting these men come back and get practices, if they can —if that is Americanism, I am not an American. If, when a man goes into the Army and gives his all, his place is to be given to someone who is in difficulties, that is not my idea of Americanism.

Chairman McIntyre: * * * I will ask Dr. Vest to close by answering the questions that were asked him from the floor.

Dr. Vest: Briefly, it was my idea that these men are here, and that we ought to train them for entrance into the American profession; that in these five years they require to attain full citizenship, they should serve, under appropriate committees, internships in hospitals that are in need of interns. In that way they can be trained so that at the end of those five years they can go out and do reasonable work.

Those of us who have come in contact with them know that they certainly do not fit into American life today. I am very sympathetic with the émigré physician. I have known some of them who are really fine fellows. On the other hand, I have known some of them who are horrible.

I think that the solution to the problem that I have presented is not unreasonable and, certainly, it will make for the transformation of the alien physician into a man who can do good work and conduct himself properly in American society.

I noticed yesterday that General Parran did not say he would take any of the émigré physicians into federal service. He suggested that they be allowed to go out (I don't think I am misquoting him) into private practice.

We must consider every foreigner in this hour of trial as a possible subversive alien, and, before we can admit him to the very warp and woof of society, we must transform him into an American citizen, and a good American citizen at that.

NEED FOR CANCER EDUCATION

Early diagnosis and prompt treatment of cancer have been advocated for many years. Yet a recent study from the New Haven Hospital leads one to question the adequacy of cancer education. In an attempt to determine the cause of delay in the recognition, diagnosis and treatment of cancer, the authors interviewed 158 successive cancer patients admitted to the New Haven Hospital or Tumor Clinic. Although delay may be the fault of the physician, the patient, or both, this study concentrated mainly on the reasons for delay on the part of the patient. Delay by the patient is defined as "having persistent symptoms for one month or more before consulting a physician."

Three patients came immediately to the hospital for emergency treatment. In 83 per cent of the remaining cases (155), the patient was wholly or partly responsible for a delay of one month or more.

What reasons did these patients give for not securing medical help sooner? Fifty-seven per cent of the total group were aware of their symptoms but did not consider them serious enough to warrant medical attention. Eleven per cent realized the importance of their symptoms but were "too busy to take care of them." Seven per cent of the patients were considered ignorant and incompetent by the examiners. Ten per cent of the group delayed because of expense. A small proportion—1.4 per cent—delayed because of fear of doctors; .6 per cent, because of adherence to some cult—Nassau Medical News.

SYMPTOMS OF THE DISEASE OF INFANTILE PARALYSIS*

By SISTER ELIZABETH KENNY
Minneapolis, Minnesota

THE great reluctance shown by some medical men in the United States of America in accepting the Kenny method of treatment for the disease known as infantile paralysis is based on their failure to realize that the understanding of this method of therapy requires a fundamental revision of the old concept of the nature of the disease. It was firmly embedded in the minds of the medical world that the only significant change in the muscles was partial or total flaccid paralysis resulting from damage or destruction by the virus of poliomyelitis to the motor neurons in the anterior horn of the spinal cord. The deformities were believed to be caused by the strong muscles pulling and stretching the weak paralyzed ones. In order to treat this condition, immobilizing supports were applied as soon as possible to retain the bodily alignment and to overcome shortening of the supposedly strong muscles and lengthening of the supposedly weak ones. The latter would be, as it was expressed, "put in a position of advantage" by shortening, and rigidly retained in this position through the entire convalescence with the exception of the treatment periods and, even during these periods, it was supposed to be unwise to leave off the supports on the one limb while the other was receiving attention. In many textbooks it was advised to leave the supports on the limbs while the patient was receiving pool treatment.

The old treatment was wrong because the old concept of the disease was wrong. While paralysis undoubtedly occurs from this acute infection, it is not in the majority of cases the most important damaging factor. The disorders of muscular physiology which occur in poliomyelitis and which have been almost entirely neglected by the medical profession include:

1. Muscle spasm.
2. Mental alienation.
3. Muscle incoordination.

The Kenny method is designed to treat these three disabling conditions and they can be relieved by this treatment. No effective treatment is available at present for paralysis resulting from destruction of anterior horn cells.

On consideration of the world wide acceptance of the old theory, the antagonism of the medical world to a radical change, to a treatment diametrically opposed to the procedure of immobilization, can well be understood. The complexity of the new concept of this disease, in addition to the fact that these symptoms had for so long a time gone unrecognized, delayed the acceptance of my contribution. That is why it is necessary for me to be present here today and for me to visit the different parts of the earth and present my work. The prejudice against accepting a new treatment for poliomyelitis based on a new concept of the disease retarded the work in Australia for almost thirty years. I am happy to say that the medical profession in the United States of America has been quicker to discard old prejudices.

It has been stated that even with the use

THE AUTHOR

Sister Kenny, of the Elizabeth Kenny Institute, Minneapolis, Minnesota, founder of the Kenny method of treating poliomyelitis; author in collaboration with Dr. John Pohl, Minneapolis, of "The Kenny Concept in the Treatment of Infantile Paralysis."

*Presented before the House of Delegates, at the 76th Annual Meeting of the W. Va. State Medical Association, at Charleston, May 17, 1943.

of immobilization, deformities did occur despite the best efforts of the orthopedic surgeon. Therefore, to present a treatment recommending the abandonment of this procedure and a routine treatment for muscle conditions that were supposedly nonexistent would indeed impress one with the thought that the person making such a presentation was, to put it mildly, unbalanced. This was the situation in Minneapolis in 1940, at the time of my first appearance. However, owing to the fact that I had been officially introduced by my government and a group of Australian medical men of repute had sought the assistance of their colleagues of the American Medical Association for the further elaboration of my work, I was, through the good offices of Dr. Wallace Cole, professor of orthopedic surgery of the University of Minnesota, allowed to proceed. My first endeavor was to prove by evidence produced that: (1) the orthodox theory with regard to the symptoms of the disease was incorrect; (2) deformities were not caused through strong or normal muscles pulling weak ones and (3) pseudoparalysis could be induced by neglecting to treat the true symptoms, i.e., muscle spasm and mental alienation.

FIRST REPORT

It will be remembered that the first report published with regard to this new concept and treatment of infantile paralysis appeared in the Journal of the American Medical Association, June 7, 1941, and was presented by Drs. Wallace Cole and Miland Knapp who acknowledged that I had produced evidence to prove muscle spasm was present in 100 per cent of the cases under review. Muscle spasm is made up of two phenomena, viz.: 1. Hypertonus of muscles. 2. Hyperirritable stretch reflex. Both of these result from hyperactivity and hyperirritability of the synaptic connections to the motor nerve cells in the spinal cord. These muscle changes, if untreated, persist for long periods of time and in the later stages produce contractures and deformities. The earlier in the course of the disease that active therapy is begun, the better they respond to treatment. Even after a delay of only a few weeks, muscle spasm becomes far more difficult to relieve. Stretching and pressure on muscles in spasm increase the pain and exaggerate the spasm, making treatment less effective. The muscle in spasm is a weak muscle and intensive treatment is required to restore it to normal function.

Much evidence has been recorded to demonstrate the presence of the condition of mental alienation. The alienated muscle is a nonfunctioning muscle which is free from pain and is not shortened. It differs from a muscle paralyzed by anterior horn cell destruction in that, with proper treatment, it can be restored to normal function. Alienation is caused by failure of the nervous excitation to reach the intact anterior horn cells as a result of a physiological block to the passage of impulses in the spinal cord. It is evident that such a muscle will fail to function but will have the potentiality for full recovery, since the anterior horn cells have not been destroyed by the virus.

ALIENATED MUSCLE

The spasm is found in the muscle directly affected by the disease and was hitherto referred to as the strong muscle pulling the weak flaccid muscle. The muscle referred to as flaccid is really the alienated muscle which has ceased functioning because of the physiological block already mentioned and the brake put upon its action by the shortened opponent which is in painful spasm. The first procedure in the treatment of these symptoms is to relieve pain in order to overcome the spasm and allow the hypertonic muscle to relax and lengthen. This will remove the brake upon the opponent but will not remove the physiological block to passage of nerve impulses in the spinal cord. This condition requires specialized treatment by a trained technician, and muscles that have heretofore been regarded as completely paralyzed will regain function and become normal. I have demonstrated this phenomenon upon many occasions. I quote the statement made by Dr. Alfred Deacon, Orthopedic Surgeon, Chil-

dren's Hospital, Winnipeg, which appeared in the Canadian Public Health Journal, August, 1941:

"We were astounded to see Miss Kenny restore what we had recorded as completely flaccid or paralyzed muscles to full function by establishing mental awareness."

"PARALYSIS OF QUADRICEPS"

Also, during a recent visit to Minneapolis of Dr. Henderson of Mayo Clinic, Drs. Key, McCarroll and Crego of St. Louis, Dr. Compere of Chicago, Dr. Funstan of Virginia, and Dr. Schumm of Milwaukee, a patient was examined by Dr. Key in the presence of all the above mentioned medical men as well as Drs. Pohl and Knapp of Minneapolis, and pronounced to be suffering from complete paralysis of the quadriceps. It was agreed by all that this was so. This patient had had eleven days of intensive treatment for spasm in the hamstrings and had not yet received the specialized treatment for alienation of the quadriceps. I disagreed with the diagnosis and gave the patient the treatment for alienation. In a few minutes she was able to extend her leg and support it in midair.

A further example was demonstrated in New Jersey Medical Center, New York. A patient was presented to me during my recent visit, supposedly suffering from paralyzed lateral abdominals on the left side. This condition had persisted for several months and an operation for the transplantation of the tensor fasciæ latæ fibres was contemplated in the near future. However, I am happy to say that once again by our system of muscle analysis it required only a few minutes to prove that all the abdominal muscles were normal and could contract strongly. The brake in this instance was in the posterior neck and back. This evidence was presented in the presence of the supervising orthopedic surgeon, medical supervisor and assistant.

I could cite many such incidents but consider evidence recorded in Canada and presented in New York and Minneapolis sufficient. This evidence proves the presence of spasm and alienation.

The next symptom to be discussed is incoordination. I regret to say that when this word is used the reply is usually, "You mean substitution. We have always recognized that," and very little time is given me to explain that I do not mean substitution.

Substitution is a conscious effort put forth by the patient to bring a strong muscle to the aid of a weak or paralyzed muscle and perform a movement. Incoordination is an entirely different condition. It is a misdirected impulse. In attempting active contraction of a muscle, other muscles including synergists, or antagonists, or entirely unrelated muscles, even on the opposite side of the body, or at some distance from the prime mover, may be seen to contract. Muscles that contract in incoordination frequently show fascicular twitchings. Incoordination is also frequently found within a single muscle, in which instance substitution would be impossible. Incoordination may be observed in reflex as well as in voluntary motion and is fundamentally a disorganization of muscle function on an involuntary level. It may be related to the hyperirritability of synaptic connections in the spinal cord which appears to be the cause of muscle spasm. One may think of the virus as producing a breakdown of synaptic resistance and a disorganization of synaptic connections in the spinal cord, so that the impulses run riot, as it were, and other muscles not normally in action will contract.

Substitution is also a factor in the abnormal functioning of muscles in poliomyelitis. For example, a patient may have a potentially normal psoas muscle but fail to use it. When requested to flex the thigh, he will attempt to do so from the origin of the sartorius and instead of an even thigh flexion, the action would be that of pulling down the pelvis with ths sartorius contracting from its tendinous origin. This will eventually end in a pelvic deformity and an apparent leg lengthening. The action of hip flexion will be performed but not with the psoas muscle. A technician trained in the method will quickly detect this and correct the condition.

The condition of paralysis by complete destruction of anterior horn cells is not a common occurrence in this disease. It may occur in about 20 per cent of cases in contrast to muscle spasm, which is present in all cases. One may, therefore, think of anterior horn cell destruction as a common complication rather than as the primary change in poliomyelitis. For true paralysis due to motor denervation there is no effective treatment, since anterior horn cells are incapable of regeneration.

I have frequently heard the remark that patients recover without treatment. I have also frequently heard the remark that patients have been discharged as perfectly normal and have reported perhaps weeks or months or years later (especially during the period of rapid growth) to the orthopedic surgeon with more or less objectionable deformities. This can be readily understood when the symptoms of the disease have not been treated. The shortened muscles have never been attended; the spasm has not been relaxed; bone growth is retarded; ossification of one limb has been prematurely brought about and much damage has been done.

EXAMINATION BEFORE DISCHARGE

In the patients treated by our system a very minute examination is given before final discharge. This is to insure that the future of the patient shall not be handicapped if he wishes to follow the occupation of a sailor, soldier, carpenter, plumber, etc. I have been rather severely criticized for "putting the children through acrobatic feats," by those who are not familiar with our routine.

However, during my visits to other centers I have frequently been presented with patients who have not had the treatment for the symptoms mentioned above and are severely handicapped, although not suffering from any definite paralysis. For instance, I was recently asked by a doctor to give an opinion of a case of long-standing poliomyelitis. The patient was a boy twelve years old. He could not run or climb stairs satisfactorily. He walked with a peculiar gait. His pelvis was pulled downward at the back, and he had a compensatory curve in the lumbar region which caused shortening of the spinal muscles. His chest and abdomen protruded. His shoulders were pulled backward. This condition was all caused through untreated spasm in the biceps femoris. The condition had persisted for several years. However, a belated treatment for the cause of all the trouble rectified the condition in six months. Three weeks of correct treatment in the acute stage would have saved all the years of anxiety and financial loss. I have in my possession much evidence of the presence of these conditions which I shall be pleased to present to you, also evidence of the disaster attendant on the nontreatment of those symptoms and conditions.

TOUR OF INSPECTION

I have recently returned from a tour of inspection of certain centers where technicians and nurses, who have received a certain knowledge of the symptoms and the treatment evolved for these symptoms, are working. I have found that when the system is carried out in its entirety, much better results are obtained than where there has been failure to utilize certain principles. Out of the eight institutions visited I found only two adhering strictly to the Kenny technique. For instance, I have impressed upon students the advisability of the blanket bed. Two of the eight had adhered to this principle, and I found that stiffness and pain had been overcome much more quickly in these two institutions than in any of the others. Contact with the cold linen sheets will induce spasm and make treatment much more difficult. The advisability of treating the conditions from the onset may be confirmed by the evidence submitted by Dr. Lowman of Los Angeles. Dr. Lowman stated that patients he received from the Infectious Disease Hospital were in such good condition that he was doubtful about the severity of the onset and made it his business to visit the institution and see for himself. He examined the patients and found the epidemic was a severe one. The patients

were very sick. The good condition upon discharge to the Orthopedic Hospital was not due to a mild infection but to the treatment of the true symptoms in the acute stage. I also found during my round of visits that muscle testing according to accepted orthodox theories had been practiced in several of the institutions with the result that spasm was aggravated and muscle shortening prolonged and final normal recovery minimized. However, despite the failure to adhere strictly to the method a much higher percentage of recoveries has been obtained than upon any previous occasion, and the medical supervisors were all very well satisfied.

The highest recorded recoveries in the past, according to statistics presented from the St. Louis group was 17 per cent. At all the institutions practicing the Kenny method the recoveries were approximately 80 per cent. Where the work was strictly carried out the percentage was still higher.

It will be readily understood by the evidence presented in this paper that the concept of the disease is a new one and, to gain the best results, must be recognized as such. The symptoms caused by the introduction of the virus into the nervous system are far more complex than those previously accepted and treated. My contribution to medicine has not been a reformed treatment but an entirely new concept. I am hoping that with further scientific research a progressive improvement may be brought about. I am happy to say that the research instituted since my arrival in the United States of America has increased the evidence to prove my concept correct.

POSTWAR TUBERCULOSIS

In some European countries pneumonia is a chief cause of death, the second major cause of death is tuberculosis, all age groups being affected. Under the conditions of war and military occupation, the disease is increasing, and it will be one of the principal problems of the reconstruction period, as it was after the last war. This time we should be better equipped to fight tuberculosis, because we learned it is a community problem and can be better dealt with through a specialized program.

Tuberculosis Abstracts

Furnished Through the Courtesy of the West Virginia Tuberculosis Association

Out of 860 colleges and universities which received the annual survey questionnaire of the Tuberculosis Committee of the American Student Health Association, 488 replied and 311 reported tuberculosis case-finding programs in operation. In view of the heavy losses in student health personnel and other serious disturbances experienced by many schools because of the war, this report represents encouraging progress in tuberculosis control among our institutions of higher education. It is significant that colleges with a definite control program discovered new cases of pulmonary tuberculosis almost eighteen times as frequently as did those colleges with no program.

College Campuses in Fight Against Tuberculosis

The Twelfth Annual Report of the Tuberculosis Committee of the American Student Health Association gives striking proof of the value of a tuberculosis control program as a regular part of student health service. In the 311 progressive colleges and universities (total student enrollment, 558,075) reporting such programs, 744 new cases of tuberculosis were discovered, a rate of 133.5 new cases per 100,000 students. At 177 colleges (total student enrollment, 146,000) which provided no such programs, 11 new cases came to light, a rate of 7.5 per 100,000 students. Twenty-two food handlers were found to have pulmonary tuberculosis, and among faculty and other administrative officers, 40 new cases were discovered, thus bringing the total of new cases found in colleges during the school year 1941-1942 to 817.

Few diseases impose such costly and far-reaching penalties for public or personal failure to provide early diagnosis as does tuberculosis; yet the majority of institutions of higher education in this country still fail to employ modern tuberculosis case-finding methods, which are simple and not expensive. The years of disability and suffering and the financial costs involved will reach staggering proportions, and there will be numerous deaths whenever we neglect early diagnosis of tuberculosis.

It is estimated that the complete cost of finding an undiscovered case of tuberculosis among college students on now unprotected campuses might run as high as $166. This may seem expensive to some, who do not take into account the social and economic values involved in the early diagnosis of the

disease. Failure to provide modern case-finding programs, however, will invariably prove far more costly to unfortunate individuals, families and communities, and can never redound to the credit of a negligent institution.

The tuberculin test provides the most sensitive and reliable index of the prevalence of tuberculous infection. In the young adult group, for the country as a whole, 21.8 per cent of students react to tuberculin, the east and west coast sections having a higher infection rate than other sections of the country.

Many of the older, largely exploded, ideas relating to tuberculosis seem still to be firmly lodged in the minds of many people. The belief is all too prevalent that early tuberculosis gives rise to early symptoms. Certain institutions report various procedures for the follow-up of "suspects." "Weighing at frequent intervals," "frequent temperature readings," are among the more common of these. The "suspects" are usually those students who are markedly underweight. The committee therefore feels justified in emphasizing again the fact that the tuberculin test and the chest x-ray provide the only adequate means for the early detection of presymptomatic tuberculosis in the vast majority of cases.

Although it is not possible to speak in exact terms of the incidence of tuberculosis as applying to the country's student population, reports available to the committee seem to indicate a decline of approximately 30 per cent in its prevalence among college students during the past six years. This may be on the conservative side, for during this period reports from many of the larger institutions conducting excellent case-finding programs indicate an extension of these procedures to include a higher percentage of their students. It is evident that more students are being examined each year and the technics employed have improved and become more effective.

That there are various technics used in tuberculin testing is shown in Table 1. The Mantoux intradermal method continues to lead all others while P.P.D. and O.T. are fairly even choices in testing materials. A comparatively large number of colleges use the two-dose technic.

Sixty-six colleges report the ideal annual x-ray of positive reactors. The various x-ray procedures reported are indicated in Table 2.

During the school year 1942-1943 the committee enlisted the cooperation of a group of eastern colleges in a study of entering students approximating 10,000 in number. Information concerning each student includes age, home address, name and location of secondary school attended and whether a private, public, or parochial school; tuberculin test technic and results; and x-ray findings. It is hoped that this survey may continue without interruption for a period of ten years or longer, thus providing data indicating differences in the prevalence of tuberculous infection among students from various states and various home communities, accurate yearly comparisons, as well as supplying an index of any changes in the prevalence of tuberculous infection among students in this area.

TABLE 1

Testing Technics in 254 Colleges Reporting Tuberculin Testing Programs, 1941–42

Testing Method:	
Mantoux intradermal	182
Vollmer patch test	54
Pirquet	4
Combined Mantoux and patch test	3
Unspecified	11
Testing Material:	
Purified protein derivative	93
Old tuberculin	89
Combination of the two	1
Testing Dosage:	
Two-dose technic	63
Single large dose	35
Single intermediate dose	37
Single small dose	37
Combination of dosages	2
Testing Routine:	
New students and all negative reactors annually	63
New students only (no retesting)	49
New students and all seniors	29
Test optional (available to all annually)	47
Other testing routines	46

TABLE 2

X-Ray Procedures Reported by Various Institutions, 1941–42

254 Colleges Reporting Tuberculin Testing Program:	
Positive reactors x-rayed once	74
Positive reactors x-rayed annually	66
X-ray optional (acceptance general)	60
X-ray optional (acceptance not satisfactory)	10
Other x-ray routines	19
Fluoroscope used routinely to supplement x-ray	38
Fluoroscope used exclusively (chest x-ray when indicated)	12
57 Colleges Reporting No Tuberculin Testing Program:	
Chest x-ray for all new students	22
Chest x-ray for all students annually	9
Other routine x-ray programs	26

Tuberculosis Among College Students, H. D. Lees, M.D., The Journal-Lancet, April, 1943.

USE AND ABUSE OF VITAMINS

The use and abuse of the vitamins needs no special comment, because their needs by the human body have been carefully investigated and clearly explained in current medical literature, and their lack in the body is known to produce certain eye signs and symptoms which also have been explained. From these writers and investigators it has been deduced that the average healthy young individual who partakes of a generous and well-balanced diet has no need to supplement his vitamin quotient by the use of prepared vitamins.—So. Med. & Surg.

The President's Page

The National Procurement and Assignment Committee is again asking for doctors for our armed forces. I am confident that every doctor in West Virginia is willing and anxious to do his part in bringing this global war to a rapid termination. However, it must be remembered that our state has done a "lion's" share in supplying physicians in the past. In fact, we have furnished more than 130 doctors in excess of our 1942-43 quota, while many states are reported to be delinquent.

West Virginia is essentially an industrial state. Consequently, most of our mines and factories are producing war materials which are vital to the war effort. Our working people must be given immediate and adequate medical care, with a minimum of lost hours, lest our production appreciably decreases. If this home front is to be protected we cannot safely reduce our ranks.

As a member of our Procurement and Assignment Committee and as President of our State Medical Association, I am in favor of freezing all of the doctors remaining in practice in West Virginia *until such time as other states have met their quotas.*

I wonder how many doctors have taken enough interest in our future to write for Senate Bill 1161? The Ohio State Medical Association has wisely asked the members to contact their representatives in Congress personally. Through this personal contact much more favorable response can be anticipated. I appeal to you now, as a member of the West Virginia State Medical Association, to make an effort to visit personally your Congressman and the two United States Senators from West Virginia. If you cannot arrange for a personal interview, then write, and *do it today.*

To defeat this bill, we must solicit the support of our lay friends and patients. A letter from this group of individuals will be more effective than all the letters you and I may write.

Shortly after September 15, our Executive Secretary will transmit to you the recommendations of the Fact Finding and Planning Committee with reference to the socialized medical program that is being wished upon us. Whatever the recommendations of the committee may be it is our duty to support them, even though in a few isolated instances they might work a hardship upon some of our members. We must stick together to win, or perish individually.

President.

West Virginia Medical Journal

Official Journal of
The West Virginia State Medical Association
302 Atlas Bldg., Charleston, West Va.

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Published monthly on the first day of the month, at Charleston, by The West Virginia State Medical Association.

Original articles are accepted on condition that they are contributed exclusively to the Journal.

Advertising rates furnished upon request. All advertisements must conform to the standard established by the Council of Pharmacy and Chemistry of the American Medical Association.

Address all communications to Business Manager, West Virginia Medical Journal, Box 1031, Charleston, West Va. Phone, Capitol 34-625.

SUBSCRIPTION $3.50 PER YEAR

Entered as second-class matter, January 1, 1926. Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917. Authorized July 24, 1919.

THE NEEDS OF THE ARMED FORCES

The call has gone out from Washington to the medical profession of the United States for 6,000 additional physicians by Jan. 1, 1944. *The Journal of the American Medical Association* in its August 7 issue, presents a strong editorial relative to the need for additional medical officers in the Army and the Navy. Says *The Journal*:

"At a conference of the Directing Board of the Procurement and Assignment Service for Physicians, Dentists and Veterinarians, held on July 31, with the War Participation Committee of the American Medical Association and in the presence of Mr. Paul V. McNutt, chairman of the War Manpower Commission and representatives of the Army and Navy medical departments and the Public Health Service, it became apparent that the medical profession must produce toward the winning of the war an additional six thousand physicians for the armed forces before Jan. 1, 1944. Pursuant to a realization of this objective a directive has gone to the generals in command of the various service commands authorizing them to induct into the service physicians between the ages of 38 and 45 who have been declared available by the Directing Board of the Procurement and Assignment Service for Physicians, Dentists and Veterinarians and who are otherwise subject to Selective Service.

"The needs of the armed forces are real. The members of the War Participation Committee raised with the representatives of the various governmental agencies all the questions that have from time to time challenged the need; the challenge seems to have been met effectively. Indeed, the intimation was made clear that the needs of the armed forces will be met by specific regulations of the Selective Service Administration or the enactment of necessary legislation if required. All physicians up to 45 years of age who have been indicated as available have therefore placed on them now the responsibility for an immediate decision as to their enlistment with the armed forces. The need is so positive that questions of essentiality of men in positions of teaching and research and in industrial medicine are likely to be rigidly reviewed in the near future with a view to extracting from civilian life every one that can be spared.

"As the war continues and intensifies new needs for the services of the medical profession become apparent. An army in motion and one engaged in the kind of aggressive combat that now concerns our armed forces needs physicians in even greater numbers than have heretofore been demanded. Many thousands of interned aliens and prisoners are now the burden of the United States and must be given medical care.

"If there is any physician who still hesitates under these circumstances, he should realize the added advantage to him of accepting now the commission that is proffered. Should it become necessary in the near future, as seems quite likely, to enlist new activity by the Selective Service Administration and the Officers' Procurement Service to bring in the six thousand physicians that are so certainly required, those recruited by that technic will inevitably begin their service with a minimum commission that is offered, namely that of first lieutenant. Until that technic is installed, the men of special competence and of years beyond those of the recent graduate have the assurance of careful consideration and a commission more nearly in accord with age and experience.

"The call here made has the approval of the Directing Board of the Procurement and Assignment Service and of the War Participation Committee of the American Medical Association. The medical profession may well be proud of the fact that it has been the only group given, by directive of the President, the responsibility of maintaining service in civilian life and at the same time supply-

ing the needs of the armed forces. Let us not fail in meeting fully the trust that has been placed upon us."

We regret that the challenges of the actual need were not gone into a little more fully by the editorial writer in *The Journal*. Although they may be entirely without factual basis, so many rumors are abroad that the impression is widely prevalent among the profession, certainly as far as West Virginia is concerned, that the military need is not so very urgent. Therefore, we would wish a freer discussion of these challenges.

Certainly there can be no question of the very serious civilian need, and it is, in the lingo of the street, "up to somebody in the know" to answer the rumors that there are literally hundreds of medical officers in army camps with only a modicum of work to do; that internes holding commissions are allowed to twiddle their thumbs for six weeks between the completion of their interneships and their call to training; that physicians are assigned to duties which could be just as well performed by members of the Medical Administrative Corps, for instance, mess officers, detachment commanders, postal officers, adjutants, et cetera; and, that certain of the larger states have not furnished their quotas thus far.

Physicians are far above the intellectual median and the very nature of their calling makes them fairly accurate reasoners and entirely independent thinkers, so much so that an unvarnished ipse dixit from 535 North Dearborn is not always absolutely convincing. Doctors are certainly as patriotic as any other segment of our population, and, if the present enveloping fog is dispelled and they are shown the actual need, we venture to predict that not only 6,000 but twice 6,000 men of medicine will volunteer.

NO FACE-LIFTING AT THE GREENBRIER

The glory, the beauty, and the apparent permanence of the world famous Greenbrier at White Sulphur Springs remain even after its conversion into a 2,000-bed Army Hospital. To walk through the grounds and into the spacious lobby is to see the Greenbrier as it has been for years. There is no marked change in exterior or interior.

When the Army moved in, many loyal Greenbrier-minded West Virginians had visions of wholesale destruction of trees, plants and shrubberies, the conversion of golf courses into gardens or sites for barracks, and the revamping of the interior to make it conform with usual hospital architecture. Today the grounds are just as attractive, the trees still stand, and the shrubbery and flowers are just as beautiful as in the past; the golf courses remain intact, and are well kept and in constant use throughout the day; and the changes made in the interior would have to be pointed out to be recognized.

While the name is gone, the Greenbrier still lives. "Guests" are still present from every state in the union. The only difference is that instead of sport clothes and evening attire, the dress is informal. Without exception, the wounded and the sick among our soldiers wear attractive convalescent robes.

The commanding officer is Colonel Clyde M. Beck, veteran of World War I and recently stationed at Camp Joe T. Robinson, near Little Rock, Arkansas. Previously he had seen service in the Philippines, Panama and at several posts in this country. Colonel Beck's expressed ambition is to make Ashford General the best Army Hospital in the United States. This is sweet music to those of us who love the Greenbrier.

Colonel Beck is surrounded by a staff of competent doctors and surgeons. The patients receive the very best care possible. Every appliance known to modern medicine and surgery will be found in operating rooms and in the x-ray and other departments. Already over 600 soldiers have been returned to active duty in the Army. This is a record of which every man on the staff can well be proud. Colonel Beck is doing a splendid job. We wish him continued success at Ashford General, and express the hope that he may

be permitted to remain there indefinitely.

We borrow this sentence from the article, "Doctors at the White Sulphur Springs," by Guy Hinsdale, M. D., Medical Director at the Greenbrier from 1929 to 1942, printed in the May 1943 issue of *Bulletin of the History of Medicine*: "When taps sound at the Ashford Hospital, we think of the glorious record of the Greenbrier, and at reveille we hail the day which will bring comfort to the wounded and peace at last to a war torn world."

SEPTEMBER 15 DEADLINE

An attempt is made in this issue of The Journal to summarize the new income tax regulations as they affect the doctor. We are not at all satisfied with this summarization, but it will at least enable the doctor to begin to get his income tax house in order preparatory to filing the first declaration of anticipated income on September 15.

In cases where it is feasible, it seems to us that the wise course to pursue is for the doctor to enlist the services of a deputy collector in the preparation of this first declaration. Once the very complicated system set up by the government is mastered, the doctors should experience very little difficulty in the preparation of declarations which must be filed at stated times in the future.

SPEAKING OUT IN MEETING

Too much cannot be said or written about the evils of the Wagner-Murray Bill for the broadening of the social security program. Doctors the country over should make it their unfinished business to digest the provisions of this iniquitous plan on the part of some of the wild-eyed brethern in Washington to take over at one fell swoop the entire medical profession, lock, stock, and barrel.

An analysis of the bill is printed in this issue of the Journal. It was prepared by the Bureau of Legal Medicine and Legislation of the American Medical Association and printed originally in the Journal of the American Medical Association. This analysis should be read together with the bill itself, a copy of which may be obtained from Senator Harley M. Kilgore or Senator W. Chapman Revercomb, at Washington.

Congress reconvenes in September and there is no doubt that the advocates of this legislation will at that time endeavor to speed hearings in committee. These forces which seek to change the American way of practicing medicine are again on the march. If you are opposed to socialized medicine, don't be afraid to speak out in meeting. Write to Senators Kilgore and Revercomb and to the Congressmen from your district. Better still, see the senators and your congressman in person. They will all likely be at their homes for the next few days. The West Virginia delegation in Congress is composed of Senators W. Chapman Revercomb, Charleston, and Harley M. Kilgore, Beckley; and Congressmen A. C. Schiffler, Wheeling; Jennings Randolph, Elkins; E. G. Rohrbough, Glenville; Hubert S. Ellis, Huntington; John Kee, Bluefield; and Joe L. Smith, Beckley.

WHY NOTS ON MORATORIUMS

We are in hearty accord with the effort now being put forth to declare a moratorium on partisan politics until 1944 and favor using the surplus energy thus saved to further the war effort. But why stop at partisan politics? Why not postpone for the duration all efforts at introducing change in the American way of life? Why under the guise of "social security" endeavor to enact into law some idea of a well-meaning crackbrain which may result in far more evil than good? Why not declare a moratorium on social, economic and legislative experimentation for the duration at least?

One of the evils of our time has been the introduction into America of sundry foreign ideologies, essentially European, which tend to the development of a totalitarian state,

and which are in their native habitat the products, or by-products, of feudalism, monarchy and dictatorship. They have no place in an indigenous democracy such as is the United States of America.

Why not postpone consideration of that phase of the Murray-Wagner Bill which provides for the establishment of state medicine? This embryonic legislative monstrosity which would establish a dictatorship by one man not only over the medical profession but over the entire field of medical care should result in a legislative abortion. Why not aid its antepartum death by writing each senator and congressman from West Virginia opposing such legislation? And finally, why not a moratorium in Washington on social dreams and social dreamers and get down to brass tacks in order to achieve early winning of the war?

DOCTORS LICENSED TO PRACTICE

As a result of the examination held by the Public Health Council at Charleston, July 6-8, 1943, twenty-four doctors have been licensed to practice medicine in West Virginia, nineteen by examination and five by reciprocity.

The following doctors were licensed by examination: David Bressler, Fairmont; Joseph Edmund Brown, Cleveland Heights, Ohio; John Alfred Kyle Bush, Glenville; Andrew Kimmins Butler, Elm Grove; Elmore Meredith Clubb, Jr., Morgantown; Eugene Martin Frame, Charleston; Francis Joseph Gaydosh, Wheeling; John Thomas Gocke, Clarksburg; Charles Arthur Haislip, Valley Grove; Edgar Frank Heiskell, Jr., Morgantown; Logan William Hovis, Parkersburg; Jesse Jay Jenkins, Jr., Farmington; Paul Charles Johnson, Morgantown; Johnsey Lee Leef, Grassy Meadows; William Ord Nunnally, Wilcoe; Lynwood Burdette Smith, Tampa, Florida; Robert Russell Trotter, Morgantown; Lysle Trenton Veach, Maysville; Charles Monroe Ward, Beckley.

Physicians licensed by reciprocity were Raymond J. Dalton, Van; Hugh Stephenson Edwards, Beckley; Jacob Samuel Huffman, Harman; John Tallman Jarrett, Dunbar; Paul James Nutter, Clarksburg.

General News

MUST FILE DECLARATION AND PAY HALF 1943 INCOME TAX SEPT. 15

Certain classes of taxpayers, including doctors who are not on salary, are required to file a declaration of anticipated income by September 15, 1943. Forms for the purpose will be available about September 1, and extra copies may be obtained from the Collector of Internal Revenue at Parkersburg, or from any branch office.

The estimate to be filed September 15 will consist of (1) the estimated total tax (normal tax, surtax and victory tax), plus the difference between the 1942 tax and the 1943 if the 1942 tax exceeds the latter; and, (2) the total of victory tax withheld, if any, the anticipated employer withholding tax, if any, and the March 15th and June 15th payments on 1942 income tax liability.

According to F. Roy Yoke, Collector of Internal Revenue, the anticipated or estimated tax for 1943 will be payable one-half on September 15 and the other half on December 15. The remaining installment will be changed in amount, or increased or decreased to reflect the revision.

1943-1944 Tax Dates The Doctor Should Remember

1943

Sept. 15—File first 1943 declaration of estimated tax.

Sept. 15—Pay one-half of 1943 estimated tax.

Dec. 15—Amend declaration of estimated tax for 1943 if this is necessary. (A 6% penalty will be added if the estimated tax liability is more than 20% under the actual tax liability reflected on final return).

Dec. 15—Pay second half of 1943 estimated tax.

1944

Mar. 15—File 1943 final income tax return.

Mar. 15—Pay unpaid balance (if any) of 1943 tax based on final figures.

Mar. 15—File first declaration of estimated tax for 1944.

Mar. 15—Pay first quarterly installment of 1944 estimated tax.

Mar. 15—Pay one-half of the unforgiven 1942 tax.

An annual income tax return must be filed on or before March 15 of each year as in the past. However, in most cases, through the filing of a declaration or estimate, the greater part of the tax will have been paid, and the taxpayer will then have to pay only the difference.

At this same time, the forgiveness of tax based on the smaller of the taxable year, 1942 or 1943, will be taken into consideration, 25 per cent of the tax for the smaller year being added to the other. This becomes the revised 1943 tax liability. Inasmuch as only 25 per cent of the liability for the smaller year is collectible, it is readily ascertained that 75 per cent forgiveness exists. One-half of this carry-over of tax is payable March 15, 1944, and the remainder March 15, 1945.

Doctors in the Military Service

Under the provisions of the new act, compensation to the extent of $1500 received by doctors for active service in the Army or Navy for any taxable year, beginning January 1, 1943, is not to be included as gross income. This $1500 is in addition to the personal exemption and credit for dependents, and takes the place of the $250 and $350 exclusion in the former law. Proper refunds of 1942 taxes will be made to doctors in the armed forces who paid all of their 1942 taxes last March, 1943, or who paid in installments.

Doctors who are serving with the armed forces overseas will not be required to file income tax return until six months after their return to this country.

DISTRIBUTION OF OCD PLASMA

Figures compiled by Col. Wm. S. Keller, USPHS, of Cleveland, regional medical officer, covering total plasma reserves in the Fifth Defense Region, show that as of July 1, 1943, plasma was held in reserve by custodians in West Virginia, as follows:

Bluefield, 100 units, USPHS dried, Dr. H. G. Steele; Charleston, 510 units, Grantee Hospital, Charleston General Hospital; Elkins, 180 units, Grantee Hospital, Davis Memorial Hospital; Morgantown, 100 units, USPHS dried, Dr. Eldon B. Tucker, Monongahela Building.

NEW SUPERINTENDENT AT WESTON

Dr. Harry A. Garrison, formerly of Morgantown, who has served as superintendent of Spencer State Hospital for the past two years, has been appointed by Governor Neely as head of the Weston State Hospital. He succeeds Dr. J. E. Offner, who was recently appointed state health commissioner. Dr. A. L. Morris has been named acting superintendent of the Spencer institution, where he has served as assistant superintendent for the past several months.

NEW FEE SCHEDULE APPROVED FOR MATERNITY CARE PROGRAM

A new fee schedule, proposed by the State Health Department for the emergency Maternity and Infant Care program for the wives and children of enlisted men, has been approved by the Children's Bureau of the Labor Department at Washington. The fee for complete medical services during the prenatal period, labor and puerperium was fixed at $50, effective August 18. Previous to that date, the fee had been $35.

The schedule also provides for the payment of a fee of $35 in cases where prenatal care is provided in a prenatal clinic, or elsewhere, or is not provided by a physician during the delivery. This fee covers medical care during labor and postpartum care and examination approximately six weeks after delivery. The old schedule provided for a fee of $25 for this service. Proportionate amounts of prescribed prenatal care will be paid at the rate of $3 per visit, as against $2 under the old schedule.

The maximum fee for consultation involving performance of major surgery has been raised from $35 to $50 for obstetric care during pregnancy, labor and the puerperium.

A physician making a round trip of more than fifteen miles from his office to visit an acutely ill infant is to be reimbursed at the rate of five cents per mile extra to that allowed by the fee schedule for sick infants.

Medical care was authorized for 974 cases at 55 approved hospitals during the first fifteen weeks' operation of the plan, according to figures compiled by Dr. J. E. Offner, State Health Commissioner. As of August 19, a total of 361 West Virginia doctors had qualified for participation in the program, which is under the direct supervision of Dr. Lenore Patrick, Director of the Division of Maternal and Child Hygiene.

ENCOURAGEMENT FOR THE FAT MAN

Examination of 2,332 white men revealed that the pot-bellied had, on the average, less pneumonia and cancer, and no more diabetics than the willowy and sylphlike. This does not apply, of course, to extremes. Among those examined, the enormous tended to die early, as did the cadaverous; but a modestly aldermanic girth is quite consistent with long life.—Dr. Raymond Pearl as quoted in Southern Medicine and Surgery.

AUXILIARY BOARD MEETS SEPT. 2

A meeting of the Executive Board of the Woman's Auxiliary to the West Virginia State Medical Association will be held at the Daniel Boone hotel, Charleston, September 2, at 10:30, A. M. The call was issued by Mrs. John P. Helmick, of Fairmont, president of the Auxiliary, who has also asked the members of the Advisory Board to meet at the same time. The Executive Board is composed of the elected officers, presidents of county auxiliaries and the chairman of standing and special committees. Dr. Hu C. Myers, of Philippi, is chairman of the Advisory Board, the other members being Drs. H. V. Thomas, Clarksburg; Raymond Dunn, Charleston; Russell B. Bailey, Wheeling; and, R. O. Rogers, Bluefield.

SENATE BILL 1161

Without apology or explanation a legislator has undertaken to overthrow the practice of medicine. A bill is introduced into the Senate and overnight doctors of medicine become government property to serve like robots.

Gone is the freedom of enterprise that took doctors to the laboratories in silence and often in poverty, to develop cures for disease. Gone is the incentive that gave the physician a personal pride in his work, an interest in the welfare of his patient. Gone, all this, if the bill becomes law.

At the base am I, the lowly doctor, now offering what drugs a Washington official tells me to use, delivering babies according to the manual of instructions that will be prepared, setting bones with the aid of a chart from the Health Service, identifying measles or meningitis by comparing my findings with color photographs of typical cases.

I work eight hours and I rest at night. The doctor on the night shift follows through while I sleep and I shall be content, the legislator tells me, for the government will send me money for my services, as if that solves my fears.

As if that's why I dressed at two this morning to visit the baby with diphtheria, as if that is why I stayed at the hospital all night with the boy who fell from a tree! And the patient too is happy because he pays nothing for this service. It is free except for what he pays the government. The fact that this is many times the amount he ever paid his doctor should not bother him, we hear, because freedom is expensive. Our government will make him free. And me also, they say.—The Medical (Wichita, Kansas) Bulletin.

UNITED STATES CADET NURSE CORPS

The needs of the war effort make imperative a considerable increase in the numbers of nurses for essential civilian and military nursing services. To aid in meeting this need, the Congress, in passing the Bolton Act, has created the United States Cadet Nurse Corps.

The Bolton Act, as pointed out by Dr. Thomas Parran, Surgeon General, USPHS, provides for grants-in-aid to nursing schools whereby the student nurse is relieved of the burden of tuition, fees, and other expenses which she ordinarily would have to meet herself, and, in addition, is paid a monthly stipend. Schools participating in the program will continue to select their students and to plan and operate their own curricula. Certain broad requirements are specified with regard to minimum standards of nursing education, acceleration of the curriculum, and agreement by each cadet nurse that she will continue in military or essential civilian nursing service for the duration of the war.

Several factors have combined to create the present shortage of nurses. Sixty-five thousand new students in our nursing schools this year has been set as the goal to help relieve this shortage. A large number of nurses have already joined the Army and Navy and many more are needed as the strength of our forces increases, the current requirement being 2,500 nurses per month.

Full tuition and maintenance, including uniform, are furnished the cadet, and in addition she receives a regular monthly stipend which, although too small to attract those interested primarily in monetary return, is yet sufficient so that no girl need be deterred by financial obstacles from seeking a nursing education. Stipends will amount to $15 per month during the first nine months of training, $20 during the next fifteen to twenty-one months, and $30 or more for the six to twelve months remaining before graduation.

The prospective cadet is free to enter the nursing school of her choice, provided only that the school is participating in the program, and that she herself is able to meet the scholastic, personal, and physical requirements of that school. While the cadet is required to agree that after graduation she will continue in essential nursing for the duration of the war, it is to be emphasized that she is not compelled to enter military service. On graduation, she is free to choose among the military services and numerous civilian nursing activities.

The young woman who is interested in joining the United States Cadet Nurse Corps should inquire from the nursing school of her own choice as to whether it is participating in the program. She must be a high school graduate; other admission requirements vary among individual schools. A booklet entitled "Nursing and How to Prepare For It" will prove helpful to young women and may be obtained free from the National Nursing Council for War Service, 1790 Broadway, New York, N. Y.

Lists of the 1,300 nursing schools in the United States which are accredited by State Boards of Nurse Examiners are also available from the National Nursing Council for War Service. The State Board of Examiners for Nurses can probably supply a list of the schools in each state. Mrs. Andrew Wilson, of Wheeling, is secretary of the West Virginia board.

SCHOOL OF MEDICINE OPENS SEPT. 27

The fall term of the West Virginia University School of Medicine is scheduled to start September 27 and end December 17. According to Dr. E. J. Van Liere, dean, twenty-five sophomore students, including two women, will complete their work December 17. Of this number, twenty will immediately transfer to the Medical College of Virginia, at Richmond, under the provisions of the medical education plan recently agreed to by that institution and West Virginia University.

The other five members of the class have been accepted at the University of Pennsylvania, University of Cincinnati, Jefferson Medical College, and Temple University School of Medicine.

MIDWIVES TO PARTICIPATE IN PROGRAM

Midwives in West Virginia are eligible to participate in the emergency Maternity and Infant Care program now being administered by the State Health Department, under allotment from the U. S. Department of Labor, according to an opinion rendered late in July by Ira J. Partlow, acting attorney general.

The statute provides that a licensed midwife may attend any woman at or during childbirth, and the opinion limits her participation in the program to that period of time.

In the same opinion, the attorney general held that osteopaths are eligible for participation in the program, but that chiropractors are not eligible.

KANAWHA SOCIETY PLANS MEETINGS

Kanawha Medical Society will serve as host to the doctors of the Sixth Councillor District at a meeting in Charleston on Tuesday, October 12. The meeting, which has been arranged by Drs. A. L. Amick, of Charleston, and H. L. Goodman, of Ronceverte, Councillors, will be in the form of a symposium on obstetrics. Dr. Harry Hudnall Ware, Jr., professor of obstetrics at the Medical College of Virginia, will be the guest speaker and will lead the discussion in which the doctors practicing within the district will participate.

All doctors in the Sixth Councillor District are expected to attend, and a general invitation will be extended to all of the doctors in the state to be present at the meeting. Sessions will be held both afternoon and evening, during which the film "Continuous Caudal Analgesia in Obstetrics" will be shown through the courtesy of Eli Lilly Co.

The first fall meeting of the society will be held September 14 at the Daniel Boone Hotel. Two prominent army doctors from Ashford General Hospital will be the guest speakers. Major R. H. Kunstadter will speak on "War Malaria and Its Significance in Private Practice," and Major R. C. Pendergrass' subject will be "Some Clinical Aspects of Virus Pneumonia."

DR. LENORE PATRICK MARRIED

Dr. Lenore Patrick, director of the division of maternal and child hygiene of the state health department was married August 21 at Williamstown, Kentucky, to Everett Chipman, banker of that city.

MISS MALONEY IN HOSPITAL

Miss May M. Maloney, of Charleston, Executive Secretary of the West Virginia State Nurses' Association, and nurse representative on the State Procurement and Assignment Committee, is in a hospital in Pittsburgh recovering from a back injury sustained in a recent fall at her home.

NEW STUDENT HEALTH CENTER DIRECTOR

Dr. Jerome E. Andes, former instructor in the School of Medicine at West Virginia University, Morgantown, and recently medical director for the Hercules Powder Company at Lawrenceville, Kansas, has been appointed director of the student health center at the university to succeed Dr. R. R. Summers, who resigned to enter private practice at Charleston.

ROBT. F. ROTH NAMED DIRECTOR DPA

Another change has been made in the office of director of the state department of public assistance. Robert F. Roth, president of the board of control, has been named director by Governor Neely for the term ending July 1, 1948. He succeeds Homer W. Hanna, who has held the post since March, 1943, and who has again been appointed director of unemployment compensation, an office he had held prior to his appointment as head of the DPA.

DR. HENDERSON SPECIAL CONSULTANT

Dr. Elmer L. Henderson, of Louisville, Kentucky, chairman of the Procurement and Assignment Committee for the Fifth Service Command, has been named by the Secretary of War as special consultant on surgical problems in connection with the Army Air Force. He will continue in active practice at Louisville, but will confer frequently with representatives of the Surgeon General's office in Washington.

AVIATION MEDICAL EXAMINERS

West Virginia is again represented in another large class which recently completed the course for aviation medical examiners, the practical portion of which was given at the three army air force classification centers and the didactic portion at Randolph Field, Texas. According to The Journal of the American Medical Association, the following West Virginia doctors were members of the graduating class at exercises held June 3 at Randolph Field: Lieut. William A. Dasher, Parkersburg; Captain James H. Gray, Jr., Clendenin; and Lieut. Owen A. Groves, Charleston.

DR. RAY M. BOBBITT IN HOSPITAL

Dr. Ray M. Bobbitt, past president of the West Virginia State Medical Association, and chairman of the Fact Finding and Planning Committee, is convalescing in the Chesapeake & Ohio Hospital at Huntington following an emergency operation performed Aug. 22. The meeting of the committee planned for September 2, at Charleston, has been postponed and will probably be held Sept. 16.

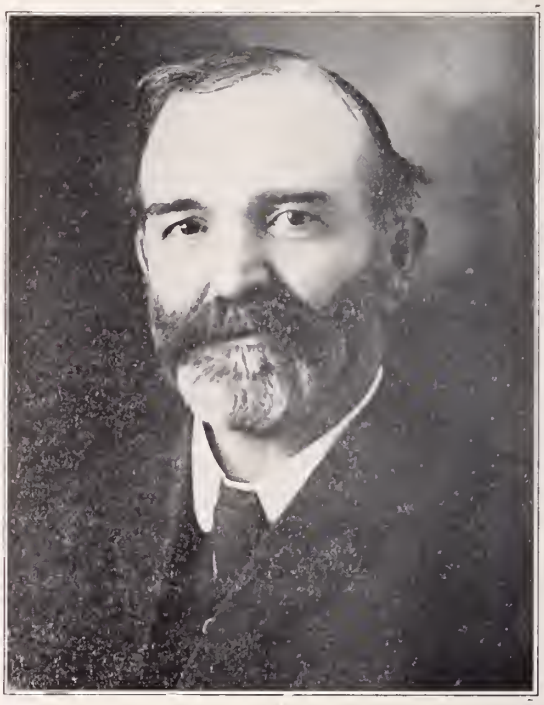
BIOTIN MOST EXPENSIVE VITAMIN

World's most expensive vitamin, biotin, which in its natural state costs $4,000,000 an ounce, is now produced synthetically by a chemical concern in N. J. The company expects to find many new uses for this powerful vitamin.

Obituaries

CYRUS HAYMOND MAXWELL, M. D.

Dr. Cyrus Haymond Maxwell, past president of the West Virginia State Medical Association and dean of the Monongalia County Medical Society, died at his home in that city July 25, 1943, following a long illness.



DR. C. H. MAXWELL

Dr. Maxwell was born March 22, 1863, near St. George, Tucker County, West Virginia, son of Rufus and Sarah Jane (Bonnifield) Maxwell. He attended school at Valparaiso (Indiana) Normal, and the University of Arkansas, and received his M. D. in 1898 at Gross Medical College of Rocky Mountain University, Denver, Colorado. He had resided in Morgantown for over forty years. Besides holding several offices in the Monongalia County Medical Society, including that of president and secretary, he was for several years a member of the Council of the West Virginia State Medical Association, serving as president in 1931. At the time of his death, he was an honorary member of his local medical society, the State Medical Association, and the American Medical Association.

Surviving are his widow, one daughter, Mrs. Ruth Maxwell Palmer, of Morgantown; and,

three sons, Capt. Paul Maxwell, now in Australia; Lt. Col. C. H. Maxwell, Jr., Camp Lee, Virginia; and, Dr. George Ralph Maxwell, of Morgantown.

JAMES T. BAKER, M. D.

Dr. James T. Baker, 74, of Huntington, died at his home in that city July 20 following an illness of one year.

Dr. Baker was born in Lawrence County, Ohio, January 20, 1869, son of Thomas W. and Elizabeth Ida Baker. He was graduated from Concord Normal School, at Athens, and attended West Virginia University. He graduated at the University of Virginia in 1901. He had lived in Huntington since 1913.

Surviving are his widow, and one daughter, Mrs. Estelle Baker Tabor, of Huntington.

Funeral services were held at the residence July 22, with Dr. W. C. Reeves, pastor of the Highlawn Baptist Church, officiating.

SAMUEL AUSTIN DANIEL, M. D.

Dr. Samuel Austin Daniel, 74, formerly active in the practice of medicine at Welch, died at his home in Horsepen, Virginia, July 20, following a long illness. He had retired about ten years ago following a stroke.

Dr. Daniel graduated at the Kentucky School of Medicine, Louisville, in 1894. For many years he was active in state politics. He served as sheriff of McDowell County from 1916 to 1920. He was an honorary member of the McDowell County Medical Society, the West Virginia State Medical Association, and the American Medical Association.

ARTHUR THOMAS McCORMACK, M. D.

Dr. Arthur T. McCormack died of an acute heart condition at his home in Louisville, Saturday night, August 7. He was born at Howard's Mill, Nelson County, Kentucky, August 21, 1872, the son of Dr. Joseph N. and Corinne Crenshaw McCormack. Dr. McCormack was State Health Commissioner, a position he had held since 1912, and had been for many years Secretary of the Kentucky State Medical Association. He was president of the Southern Medical Association in 1939-40, and president of the American Public Health Association in 1940-41.

Dr. McCormack was an A. B. of Ogden College; an M. D. of Columbia; a D. P. H. of Wayne University; an honorary D. Sc. of Berea; and an LL.D. of Transylvania University. He was a veteran of World War I, having organized Base Hospital 59, later serving as Chief Health Officer of the Panama Canal Zone. He had served as president of the Conference of State and Provincial Health Authorities of North America, of the Medical Veterans of the World War, and of the Association of Military Surgeons of the United States.

Dr. McCormack's father, Dr. J. N. McCormack, organized the State Health Department of Kentucky sixty-four years ago. The elder Dr. McCormack held the office of Commissioner of Health from the founding of the department until 1912 when he was succeeded by his son who had been Assistant State Health Commissioner since 1898. Thus for sixty-four years the McCormacks, father and son, guided the health work of the Commonwealth of Kentucky.

Dr. McCormack had the unusual distinction of having been licensed by his own father to practice medicine, a privilege which has been very rare in the annals of American medicine. He was for many years editor of the Kentucky Medical Journal and for many years represented Kentucky in the House of Delegates of the American Medical Association. By virtue of his personality and his years of service he was one of the most influential members of that body, having served often as chairman of the Reference Committee on Hygiene and Public Health and several times as Chairman of the Committee on Reapportionment.

Dr. McCormack was a Democrat, but was retained in office by Republican governors as well as by those of his own party. He was a Presbyterian and a Mason. A fluent and convincing speaker, he was active in all medical organizational work, and was an especially ardent worker in the Southern Medical Association, being a member of its Board of Trustees at the time of his death. Three loyalties guided Dr. McCormack's life: to Kentucky, to the medical profession, and to his friends. Of a jovial disposition and a brilliant conversationalist, his friends were legion and he was familiarly addressed by his professional confreres throughout the United States as "Arthur." Kentucky has lost a brilliant son and the medical profession an outstanding member. Peace to his ashes!

WITH DOCTORS IN THE SERVICE

Capt. Elbert Newton DuPuy, of Beckley, has been awarded the silver star for gallantry in action in the Tunisian campaign. The War Department's citation is as follows:

"During heavy enemy shelling of the command post an officer was wounded and unable to reach shelter. Capt. DuPuy unhesitatingly ran through heavy and accurate artillery fire to reach the wounded officer.

"Although the position continued to receive heavy artillery fire, he disregarded his own welfare by remaining with the officer calmly and efficiently completing his first aid treatment. The courage, perseverance, and devotion to duty displayed by Capt. DuPuy reflect great credit upon himself and the command and are highly commendable."

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Capt. L. N. Strickland, of Widen, who has been on duty at a camp in the west, is now with the armed forces somewhere overseas.

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Major F. E. Brammer, of Huntington, who has been stationed at Camp Mackall, N. C., for several months, recently spent a few days' leave visiting friends at his home and in Charleston.

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Lieut. (j.g.) Harold E. Muller, (MC), USNR, of Huntington, who has finished a course of training at the Field Medical School at Camp Lejeune, N. C., and who graduated from the Parachute School at the same camp, is on duty with the Paramarines on the west coast. Capt. Muller is the first West Virginia doctor to be reported as qualifying as a parachutist in any branch of the service.

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Capt. J. C. Gaskel, of Williamson, is attached to the staff of a station hospital in North Africa.

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From somewhere in Alaska comes this most interesting letter from Capt. Charles E. Staats, of Charleston, who is on duty there as a member of the surgical staff at a station hospital:

"Here in Alaska, the most paradoxical land under the American flag, I'm sitting at my desk, the corner of which is graced by a vase of pansies surmounting a chess board. At my elbow in the slanting shafts of the sun glitters Nana, the arctic flying goldfish, sole survivor of the group written up in 'Collier's' under Wing Talk a month or so ago. The pickle jar in which she saucily flips her frost-bitten tail, now healed, is shaggy with brilliant green algae, and it is indeed difficult to believe it can be late evening. Sitting in shorts stripped to the waist before the open window surprises me no less than you, for the waning of summer gave its sign of goldenrod in bloom a month ago.

"I'm serving in a station hospital where the professional relationships are as ideal as if it were all a dream. Even the presence of my cousin, Captain Dwight Staats, of Ripley, West Virginia, who serves in the same capacity on the Medical Service as I upon Surgery, enhances the illusion. Together we enjoy many a laugh over the confusion occasioned by our similar names and here, as at home, I am becoming known by my first name.

" 'Disgustingly healthy,' the surgery is limited to appendectomies, tonsillectomies, and other procedures common to the age group, with exceptions. If I see another 'cyst, sacrococcygeal, pilonidal, congenital' in civilian life, I'll probably head the operative record with 'cyst, excision of.'

"Between times for recreation the choice is unlimited. Ice skating and skiing head the winter sports, fishing and duck hunting those of summer. I've thrown 20-inch greyling caught upon a No. 14 Gray Hackle, with a four pound leader and 4½ ounce rod, back to find larger ones. Once for diversion I left the hospital at 11 A.M. for a bear hunt and was back at work at 2 P.M. the same day with beautiful snaps to prove the chase. Fresh cream (and milk) to pour over wild red raspberries and powdered sugar are available for one who will walk half a mile for the berries. Blueberries grow here in profusion.

"Dwight and I send our best regards to our friends from this beautiful land of mountain and lakes, planes and dog teams, seventy below and ninety above, a land truly of beautiful contrasts."

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Capt. Robert W. Bess, of Piedmont, who has been stationed at Evansville, Indiana, for several months, is now attached to the Station Hospital at Camp Breckinridge, Kentucky.

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Dr. Claude B. Smith, of Charleston, who is attached to the 1st Medical Division at San Antonio, Texas, has been promoted from Captain to Major.

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Lt. R. M. Ferrell, of Webster Springs, is with the American forces in North Africa.

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Capt. Ralph J. Jones, of Charleston, who has been in special training on the west coast, is on active duty somewhere in the South Pacific.

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Lt. Norman Friedman, of Longacre, who has been stationed at Camp Shelby, Mississippi, for several months, is now with the armed forces in the South Pacific.

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Dr. Lewis E. Nolan, of Montgomery, who has been in charge of the laboratory service at the Station Hospital at Fort Sill, Oklahoma, for several months, has been promoted from Captain to Major.

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Lt. Comdr. Z. J. Waters, of Martinsburg, is now attached to the Medical Company, Headquarters Battalion, at Camp LeJeune, New River, N. C.

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Capt. Arkie B. Bowyer, of Elkview, who has been stationed at Stark General Hospital, Charleston, S. C., has been transferred to the 32nd Field Hospital, at Camp Rucker, Alabama.

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Lt. Frederick H. Dobbs (Mc), USNR, of Wheeling, is a member of the Aircraft Crash Investigation Board at the U. S. Naval Air Station at Pensacola, Florida. He is shown (extreme right) contemplating the nature of an operation necessary to extricate his car mired in a Florida swamp. The other members of the party are (l to r) Lieut. Dietz, aviator member of the Board, and Dr. Raymond Cook, professor of ophthalmology at the University of Arkansas.

Dr. Edmund O. Gates, of Welch, who is in command of a station hospital, and who has been overseas for nearly a year, has been promoted from Major to Lieutenant Colonel. He has been in the service since the spring of 1941. His hospital station is in an area where there is not much activity. He writes that the normal sick rate is low, but that, notwithstanding the fact that the troops are comfortably housed and well fed, it is difficult to keep up morale and enthusiasm as most of them have been away from home and inactive for nearly two years.

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Lt. Willard Pushkin, of Charleston, is attached to a station hospital somewhere overseas.

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Dr. G. Arthur Shawkey, son of Dr. and Mrs. A. A. Shawkey, of Charleston, who graduated in medicine at Northwestern University in 1942, and who has just completed his internship at St. Louis City Hospital, has reported for active duty as a first lieutenant in the Army Medical Corps. He is stationed at Carlisle, Pennsylvania, where he will be given special training for the next few weeks, after which he will be assigned to duty with the Army Air Force.

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Capt. P. C. Chenoweth, of Elkins, is attached to the 15th F. A., Obsn. Bn., at Fort Dix, New Jersey.

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Dr. J. M. Brand, of Chester, has been transferred from Camp Lejeune, N. C., to Camp Pendleton, California, for service with the U. S. Marine Corps. He has recently been promoted from the rank of Lieut. (j.g.) to Lieutenant.

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Major Clarence I. Butte, Jr., of McDowell, who has been stationed in Louisiana, is now overseas.

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Lt. Col. Robert D. Harman, of Kingwood, who was commissioned nearly three years ago and assigned to duty with the W.V.N.G., is now the Commanding Officer of the First Convalescent Hospital at Fort Jackson, S. C. The following are excerpts from an interesting letter just received from him:

"Since my arrival at this post I have had the opportunity to read our West Virginia Medical Journal for the first time in over two and a half years. I particularly appreciated reading your

column, "With Doctors in the Service." I hope that you will place my name on your mailing list.

"As for myself, I left Kingwood and was examined in Charleston for service with the West Virginia National Guard in December, 1940. This I thought was for a period of one year only. The first year I spent in Alaska and Kodiak Island. After returning from Kodiak I was Executive Officer at the Station Hospital at Fort Lewis, Washington, for my second year. Since that time and at present I am Commanding Officer of the First Convalescent Hospital here at Fort Jackson, S. C.

"At this post I have met Major Dorsey Brannon of Morgantown, and he is the first West Virginia Medical Officer whom I have met since entering the service. Major Brannon is on the Surgical Staff at the Station Hospital at Fort Jackson, and I understand that he is doing the major portion of the surgery here.

"Kind regards to my doctor friends both in and out of the service."

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Capt. H. L. Hegner, of Wellsburg, who has been in desert training in the west, has been transferred to a station hospital in California. He is intensely interested in his work there, and states that the location is a real garden spot, with ideal weather conditions.

* * * *

Commander A. M. French, (MC), USNR, of Logan, has been in the service since May, 1941. After spending six months at the U. S. Naval Hospital at Norfolk, he was assigned to duty on the USS Yorktown, which was lost in the battle of Midway. After the loss of the Yorktown, he was transferred to the U. S. Naval Hospital at Seattle, where he is at present serving as chief of surgery.

P. & A. COMMITTEE TO MEET

A meeting of the State Procurement & Assignment Committee has been called by the chairman, Dr. R. K. Buford, of Charleston, for Thursday, September 2, at the Daniel Boone hotel, that city. The meeting will be held at noon. Besides Dr. Buford, the committee is composed of Drs. D. A. MacGregor, Wheeling; Frank V. Langfitt, Clarksburg; R. J. Wilkinson, Huntington; Andrew E. Amick, Charleston; Lt. Col. L. Rush Lambert (MC), Charleston; and, C. J. Reynolds, Bluefield.

ANALYSIS OF THE WAGNER-MURRAY SOCIAL SECURITY BILL (S. 1161) *

Referred to generally as embodying an Americanized Beveridge plan but offered in Congress, according to Senator Wagner, "simply as a basis for legislative study and consideration," legislation was introduced, June 3, in the Senate by Senator Wagner, New York, for himself and Senator Murray, Montana, and in the House by Representative Dingell, Michigan, proposing to create a Unified National Social Insurance System (S. 1161; H. R. 2861). The Senate bill is pending in the Senate Committee on Finance and the House bill on the House Committee on Ways and Means.

The system proposed to be created will be financed in general from a trust fund established by a 6 per cent employee and a 6 per cent employer contribution on all wages and salaries, up to the first $3,000 a year, paid or received after Dec. 31, 1943. Included in this proposed system will be a system of public employment offices, increased old age and survivors' insurance benefits, temporary and permanent disability insurance benefits, protection to individuals in the military service, increased unemployment insurance benefits under a federalized unemployment system, maternity benefits, medical and hospitalization insurance benefits, a broadening of the basis of the existing social security program to embrace some 15,000,000 persons now excluded, such as farm workers and domestic servants, employees of nonprofit institutions, independent farmers, members of the professions and other self-employed individuals, and a unified public assistance program. There follows an analysis of those provisions of the ninety page bill that appear to be of particular concern to medicine.

Disability Benefits Plus Medical Care

The bill broadens the existing social security coverage by providing for the payment of cash permanent disability benefits to beneficiaries. In addition to such cash benefits, the Social Security Board, through the Surgeon General of the Public Health Service, will be authorized to make provision for furnishing medical, surgical, institutional, rehabilitation or other services to disabled individuals entitled to receive insurance benefits, if such services will aid in enabling such individuals to return to gainful work. Such services, it is contemplated, will

* Prepared by the Bureau of Legal Medicine and Legislation, American Medical Association, and printed in the Organization Section of the June 26, 1943, issue of The Journal of the American Medical Association.

be furnished "by qualified practitioners and through governmental and nongovernmental hospitals and other institutions qualified to furnish such services." In administering the provisions of this particular section of the bill, the Surgeon General and the Social Security Board will follow as far as applicable the procedure outlined by another section of the bill relating to medical, hospitalization and related benefits generally.

Medical, Hospitalization and Related Benefits

Section 11 of the bill proposes to add a new title to the Social Security Act, title IX, providing for a federal system of compulsory medical and hospitalization insurance for all persons covered under the old age and survivors' insurance, and their dependents. Each insured worker and his dependent wife and children will be entitled to receive general medical, special medical, laboratory and hospitalization benefits. In addition, the system is made elastic so that it may be enlarged in its coverage to admit other beneficiaries on a voluntary basis, such as self-employed individuals and employees of states and political subdivisions.

In order to appreciate the broad scope of this new title, consideration must initially be given to the meaning of the words and phrases used in it. The term "general medical benefit" means services furnished by a legally qualified physician, including all necessary services such as can be furnished by a physician engaged in the general practice of medicine, at the office, home, hospital or elsewhere, including preventive, diagnostic and therapeutic treatment and care, and periodic physical examinations.

The term "special medical benefit" means necessary services requiring special skill or experience, furnished at the office, home, hospital or elsewhere by a legally qualified physician who is a specialist with respect to the class of service furnished.

The term "laboratory benefit" means such necessary laboratory or related services, supplies or commodities, not provided to a hospitalized patient and not included as a part of the general or special medical benefit, as the Surgeon General of the United States Public Health Service may determine, including chemical, bacteriologic, pathologic, diagnostic and therapeutic x-ray and related laboratory services, physical therapy, special appliances prescribed by a physician, and eye glasses prescribed by a physician "or other legally qualified practitioner."

The term "hospitalization benefit" means (1) not less than $3 and not more than $6 for each day of hospitalization, not in excess of thirty days, which an individual has had in a period of hospitalization; (2) not less than $1.50 and not more than $4 for each day of hospitalization in excess of thirty in a period of hospitalization; and (3) not less than $1.50 and not more than $3 for each day of care in an institution for the care of persons suffering from chronic ailments. The exact amount of the benefit, between the minimums and maximums stated, will be fixed by the Surgeon General of the Public Health Service after consultation with the National Advisory Medical and Hospital Council to be created by the bill and after approval by the Social Security Board. In lieu of such compensation, the Surgeon General may, after approval of the Social Security Board, enter into contracts with participating hospitals for the payment of the reasonable cost of hospital service, at rates for each day of hospitalization neither less than the minimum nor more than the maximum applicable rates previously mentioned. Such payments will constitute full reimbursement, the bill provides, for the cost of essential hospital services, including the use of ward or "other least expensive facilities compatible with the proper care of the patient."

Panel of Physicians to Supply Medical Care

The Surgeon General will be required to publish and otherwise make known in each area to individuals entitled to benefits the names of general practitioners who have signified their willingness or desire to participate in the insurance program. Any legally qualified physician may so participate. A beneficiary may select any physician appearing on the panel to treat him subject to the consent of the physician selected, and may change such selection in accordance with such rules and regulations as may be prescribed. The Surgeon General may set maximum limits to the number of potential beneficiaries for whom a general practitioner may undertake to furnish medical benefits. Such limits may be nationally uniform or may be adapted to take account of "relevant factors."

The services of specialists will ordinarily be available only on the advice of the general practitioner. The Surgeon General will determine what constitutes specialist services and will also determine the qualifications of physicians as specialists "in accordance with general standards previously prescribed by him after consultation with the council and utilizing standards and certifications developed by competent professional agencies."

Payments for the Services of Physicians

Payments to general practitioners may be made (1) on the basis of fees for services rendered, according to a fee schedule approved by the Surgeon General; or (2) on a per capita basis, the amount being according to the number of individuals entitled to benefits who are on the practitioner's list; or (3) on a salary basis, whole or part time; or (4) on a combination or modification of these bases. The method of payment, subject to the approval of the Surgeon General, will apparently be determined in each area in accordance with the desires of a majority of the general practitioners collaborating with the insurance program.

Payments to designated specialists may include payments on salary (whole time or part time), "per session," fee for service, per capita, or other basis, or combinations thereof. Apparently the method of payment to be adopted for specialists will be determined by the Surgeon General.

Payments for medical services may be nationally uniform or may be adapted to take account of "relevant factors." In any area where payment for the services of a general practitioner is on a per capita basis, the bill provides that the Surgeon General shall distribute on a pro rata basis among the practitioners of the area on the panel those individuals in the area who, after due notice, have failed to select a general practitioner or who, having made a selection, have been refused by the practitioner.

The bill provides that in each area the provision of general medical benefit for all individuals entitled to receive such benefit "shall be a collective responsibility of all qualified general practitioners in the area who have undertaken to furnish such benefit."

Limitations on Benefits

The Surgeon General and the Social Security Board may determine for any calendar year or part thereof that every individual entitled to general medical benefit may be required by the physician attending him to pay a fee with respect to the first service or with respect to each service in a "spell of sickness" or course of treatment if it is believed that such a determination is necessary and desirable to prevent or reduce abuses of entitlement to such benefits. Maximum size of such fee may be fixed by the Surgeon General and the Social Security Board at an amount estimated to be sufficient to prevent or reduce abuses and not such as to impose a substantial financial restraint against proper and needed receipt of medical benefit. Likewise the Surgeon General and the Social Security Board may limit the application of such fees to home calls, office visits or both.

Participating Hospitals

For a hospital to participate in this insurance program, it must have been approved by the Surgeon General under standards prescribed by him after consultation with the council. A hospital to be approved must provide all necessary and customary hospital services and must be found to afford professional service, personnel and equipment adequate to promote the health and safety of individuals customarily hospitalized in such institution. The Surgeon General may approve or accredit a hospital for limited varieties of cases and may accredit an institution for the care of the "chronic sick." In determining the adequacy of the professional service, personnel and equipment of any such institution, the Surgeon General may take into account the purpose of such limited accrediting, the type and size of community which the institution serves, the availability of other hospital facilities, and such other matters as he may deem relevant.

Hospitalization Benefits

No application by an individual for hospitalization benefits will be valid with respect to any day of hospitalization if the application is filed more than ninety days after such day, or with respect to any day of hospitalization for mental or nervous disease or for tuberculosis after such diagnosis has been made. The maximum number of days in any benefit year for which any individual may be entitled to hospitalization benefit will be thirty. If, however, the funds in the special hospitalization benefit account fund to be created prove adequate, the maximum number of days may be increased to ninety by the Surgeon General and the Social Security Board, acting jointly.

Proposed Method of Administration

The Surgeon General of the Public Health Service will be authorized to take all necessary and practical steps to arrange for the availability of the medical, hospitalization and related benefits. He will be authorized to negotiate and periodically to renegotiate agreements or cooperative working arrangements with appropriate agencies of the United States, or of any state or political subdivision thereof, and with other appropriate public agencies, and with private agencies or institutions, and with private persons or groups of persons, to utilize their services and facilities and to pay fair, reasonable and equitable compensation therefor.

The methods of administration, including the methods of payment to practitioners, the bill provides, shall (1) insure the prompt and efficient care of individuals entitled to benefits; (2) promote personal relationships between physician and patient; (3) provide professional and financial incentives for the professional advancement of practitioners and encourage high standards in the quality of services furnished as benefits through the adequacy of payments to practitioners, assistance in their use of opportunities for postgraduate study, coordination among the services furnished by general practitioners, specialists, laboratory and other auxiliary services, coordination among the services furnished by practitioners, hospitals, health centers, educational, research and other instituitons, and between preventive and curative services, and otherwise; (4) aid in the prevention of disease, disability and premature death, and (5) insure the provision of adequate service with the greatest economy consistent with high standards of quality.

National Advisory Medical and Hospital Council

The bill proposes the creation of a National Advisory Medical and Hospital Council, to consist of the Surgeon General of the United States Public Health Service as chairman and sixteen members appointed by him. The appointed members will be selected from panels of names submitted by the professional and other agencies and organizations concerned with medical services and education and with the operation of hospitals and from among other persons, agencies or organizations informed on the need for or provision of medical, hospital or related services and benefits. Appointed members will hold office for four years, with the terms of office staggered. The appointed members will receive compensation at the rate of $25 a day for time spent on official business of the council, and actual and necessary traveling expenses and per diem in lieu of subsistence.

This council will "advise" the Surgeon General as to (1) professional standards of quality to apply to general and special medical benefits; (2) designation of specialists; (3) methods and arrangements to stimulate and encourage the attainment of high standards through coordination of the services of general practitioners, specialists, laboratories and other auxiliary services, and through the coordination of the services of practitioners with those of educational and research institutions, hospitals and

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health centers, and through other useful means; (4) standards to apply to participating hospitals and to establishment and maintenance of the list of participating hospitals; (5) adequate and suitable methods and arrangements of paying for medical and hospital services; (6) studies and surveys of the services furnished by practitioners and hospitals and of the quality and adequacy of such services; (7) grants-in-aid for professional education and research projects, and (8) establishment of special advisory, technical, local or regional boards, committees, or commissions.

Relation to Workmen's Compensation Acts

The benefits provided by this bill will not be available with respect to an injury, disease or disability coming within the purview of any state or federal workmen's compensation act.

Dental, Nursing and Other Benefits

The bill devolves on the Surgeon General and the Social Security Board jointly the duty of ascertaining the most effective methods of providing dental, nursing and other needed benefits not contained in the pending bill and of determining the expected costs of such additional benefits. The bill contemplates that the Surgeon General and the Social Security Board will report the results of their findings, with recommendations as to legislation, not later than Jan. 1, 1946.

Grants-in-Aid

The Surgeon General will be authorized to administer grants-in-aid to nonprofit institutions and agencies engaging in research or in undergraduate or postgraduate professional education. The purpose of these grants will be to encourage and aid the advancement and dissemination of knowledge and skill in providing benefits and in preventing illness, disability and premature death. Such grants-in-aid will be made with respect to each project (1) for which application has been received from a nonprofit institution or agency, stating the nature of the project and giving the reasons for the need of financial assistance in carrying it out, and (2) for which the Surgeon General finds, with the advice of the council that the project shows promise of making valuable contributions to the education or training of persons useful to or needed in the furnishing of medical, hospital, disability, rehabilitation and related benefits or to human knowledge with respect to the cause, prevention, mitigation or

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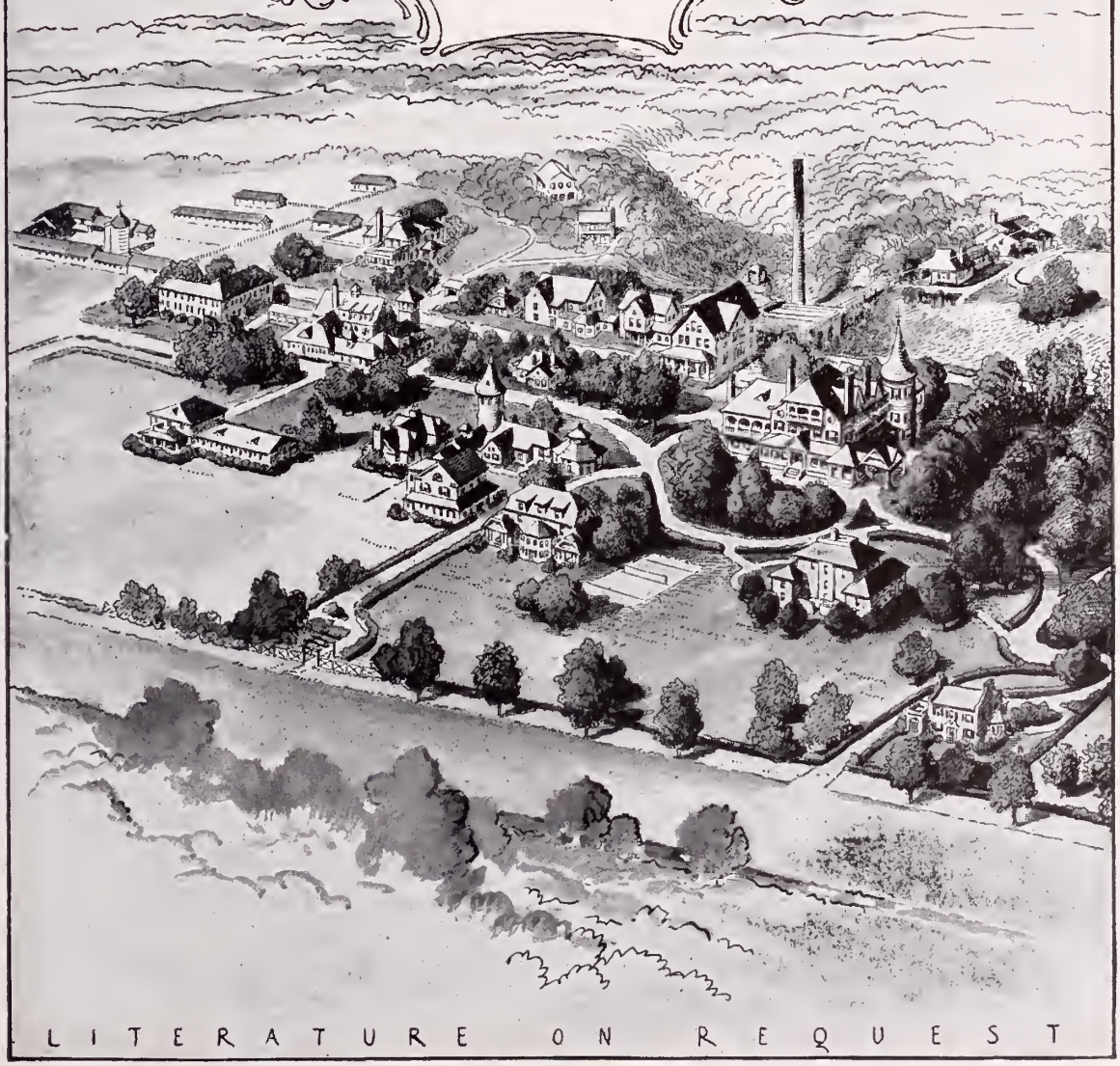

LITERATURE ON REQUEST

methods of diagnosis and treatment of disease and disability.

This part of the program will be financed by setting aside a certain percentage of amounts expended for benefits from the Federal Social Insurance Trust Fund to be created by the bill. The amount to be set aside will equal 1 per cent of the total amount expended for benefits from the trust fund, exclusive of unemployment insurance benefits, or 2 per cent of the amount expended for benefits under title IX (relating to federal medical, hospitalization and related benefits), after benefits under that title have been payable for not less than twelve months, whichever is the lesser, in the last preceding fiscal year. The bill apparently leaves all the details with respect to these grants-in-aid to regulations to be promulgated by the Surgeon General after consultation with the council.

Self-Employed Individuals

Self-employed individuals may receive the benefits of the old age, survivors, and permanent disability and medical and hospital insurance by paying into the Trust Fund an amount equal to 7 per cent of the market value of their services rendered as self-employed individuals, after Dec. 31, 1943, with respect to services in self employment after that date, but not including that part of any remuneration for employment and the market value of services in self employment in excess of $3,000 for any calendar year.

Employees of States and Local Subdivisions

The bill authorizes the Social Security Board to enter into compacts with individual states or with political subdivisions for the purpose of extending old age, survivors, and permanent disability and medical and hospitalization insurance coverage to employees of such states or political subdivisions. To finance the benefits to be provided under such compacts, the bill requires such employer to pay a social security contribution equal to 3.5 per cent of the wages paid by it after Dec. 31, 1943 and every individual beneficiary of such a compact a contribution equal to 3.5 per cent of the wages received by him after Dec. 31, 1943, excluding any amount paid or received in excess of $3,000 during any calendar year after Dec. 31, 1943.

Bill as Viewed by Senator Wagner

On the floor of the Senate, June 3, Senator Wagner described the overall objectives of his bill as follows:

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THE WEST VIRGINIA MEDICAL JOURNAL

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ENTERED AS SECOND-CLASS MATTER, JANUARY 1, 1926, AT THE POST OFFICE AT CHARLESTON, WEST VIRGINIA

Vol. XXXIX October, 1943 No. 10

CHEMOTHERAPY OF TROPICAL DISEASES: SOME ASPECTS OF PROGRESS THROUGH RESEARCH*

By G. A. EMERSON, Ph. D.
Morgantown, West Virginia

The term chemotherapy is often loosely employed to signify any therapeutic use of chemical substances and is so defined in at least one medical dictionary. In its proper restricted sense first used by Ehrlich, chemotherapy denotes only a disturbance of the host-parasite relation in pathogenic diseases, such that the pathogen is killed, excreted or rendered innocuous with minimal toxic effects in the host. There are few true chemotherapeutic agents or specifics having this desirable action, and none is ideal; with all there is room for improvement in efficacy, safety or expense.

The first specifics were discovered empirically, as, for example, cinchona, ipecachuana and mercury. In large part, chemotherapy may be considered as still in the descriptive phase of its development, but much progress has resulted from planned experimental studies since October 10, 1909, the date of the first description of arsphenamine by Ehrlich and Bertheim. Sollmann,[1] in 1931, vividly described the historical background and status of the cinchona problem; careful, intensive studies such as those of the Mellon Institute on cupreine derivatives represent the modern trend in this field. However, even with the most ideal circumstances for planned experimental studies, it must be admitted that the advances so obtained are for the most part relatively minor improvements of existing therapy and that chance plays a major rôle in the few great discoveries. This should not be interpreted as criticism of studies based on theoretical considerations; it denotes, rather, a lack of sufficient data to produce spectacular results by this method and should be considered an indication for amplification of fundamental research rather than the opposite.

THE AUTHOR

Dr. Emerson, M. S. and Ph. D., University of California; member Pharmacol. Soc.; Prof. of Pharmacology, West Virginia University School of Medicine; with W. Va. Univ. since 1935.

*Presented at the Roundtable Conference on Tropical Diseases, Latin-American Institute of West Virginia University, Morgantown, April 13, 1943 (From the Department of Pharmacology, West Virginia University School of Medicine).

It is with this basic phase of chemotherapy that the present remarks are concerned. At the risk of dwelling somewhat on the simpler principles in chemotherapeutic research, certain of the more important factors involved are discussed below.

Two major factors generally govern most chemotherapeutic studies: the relative need of therapy and the possibility of progress in therapy through research. Evaluation of need involves appreciation of incidence, potential danger or epidemiology, adequacy of current therapy, evolution of new forms of disease resistant to therapy, relations between diseases, and economic factors. The possibility of advancement in therapy through basic research is always difficult to predict. It involves the possibility of improvement of existing agents, as, for example, the intensive study of chemically related agents or the isolation of active principles from recognized galenicals or crude drugs used in folk-medicine; advances in knowledge of etiology, transmission and pathogenesis; and an appreciation of the individual biochemical factors in each disease, of both host and parasite, dealing with such matters as natural defense mechanisms, virulence and susceptibility, general pharmacodynamic effects of therapeutic agents, effects on oxidative and other enzyme systems of host and parasite, and the susceptibility of a suitable laboratory host to permit study of the infection in animals.

NEED FOR RESEARCH

Incidence surveys are of prime importance in determining need for further study. Unfortunately, they are often limited in scope, and are more difficult and less reliable precisely in those regions in which they are of greatest significance. The necessity for accurate data on a global scale in the field termed by Leake[2] geographical medicine has been served only by a preliminary survey[3] compiled by the late Dean Earl B. McKinley of George Washington University which deals chiefly with tropical diseases. Progress is expected to result from the enlightened self-interest necessitated by the war. McKinley cites the following as the most important tropical diseases in Argentina, Brazil and Chile: malaria, hookworm disease, yellow fever, leishmaniasis, typhus, leprosy, yaws, granuloma venereum, plague, schistosomiasis and trachoma. The incidence varies in these and smaller South American countries but malaria presents the greatest public health problem in all, with benign tertian as the most common type. Thus, despite the reasonable adequacy of present antimalarials, the current search for more efficient agents and better technics of applying them is highly essential. The lack of quinine imposed by the war may in the end prove of more benefit to medicine than is immediately apparent.

EPIDEMIOLOGIC ASPECT

Epidemiologic aspects of certain tropical diseases must also be considered in evaluating their importance, and again malaria furnishes a most dramatic example. The story of the control of Anopheles gambia in Brazil is inspiring, but a truly specific plasmodicidal agent would render such expensive engineering efforts unnecessary. Similarly, current studies on Chagas' disease and plague have more relation to potential dangers of these diseases than to their actual incidence. Considerations of postwar conditions give point to continued leprosy research despite its low incidence in this country. Leprosy has always been considered a public health problem, and it may be recalled that our modern hospitals are a direct development of the leprosaria of the 13th and 14th centuries. A rapidly effective specific would greatly reduce the problem of control.

Adequacy of present treatment, or of other control measures, is usually not an important factor in the choice of chemotherapeutic investigations since all specifics now available are to some extent inadequate, and also because the possibilities of rapid progress through research are commonly thought to be greater in those diseases in which there is already some factual knowledge on which to build. As an illustration, malaria may be compared with plague. Economic factors

enter into all consideration of adequacy of treatment to an extent not generally appreciated and the effectiveness of any treatment often depends as much on such intelligent measures as the establishment of leprosy clinics in India as on the intrinsic worth of the specific.

DRUG-FAST INFECTIONS

Natural selection of drug-fast forms and relations between diseases may well be considered together as facets of the same basic problem. The former has received much attention recently through reactions of bacterial pathogens and sulfonamides, but there is a considerable body of earlier work dealing with protozoan parasites of tropical diseases, which may, for example, become arsenic-fast or quinine-fast. Clinically, increased tolerance of the parasite to drugs may presumably be induced by poor technics, as by insufficient treatment or by the prophylactic use of agents not suited for prophylaxis. Its importance may be minimized by development of specifics of dissimilar chemical types for the same disease, since cross-tolerance to different agents is not common. Relations between diseases involve not only the well-known applications of these relations between syphilis, trypanosomiasis and yaws, but also certain more obscure biochemical relations, as between trypanosomiasis and amebic dysentery. Research on leprosy may have applications to tuberculosis, and blackwater fever is of less interest in itself than as part of the malaria picture.

Finally, economic factors play an unduly large rôle in many of the South American countries, India and China, and even in our own southern states. The tremendous economic saving which would result from application of effective antimalarial therapy in lieu of costly preventive engineering measures in sparsely settled districts has been discussed, but none of the specifics is effective enough as a prophylactic to wipe out an endemic focus through its use alone. Control of hookworm infestation has been highly successful in large part because of the inexpensiveness of the specific agent, carbon tetrachloride. In veterinary medicine, it is possible to tolerate a condition such as has been described in Panama, where the cost of the specific for equine trypanosomiasis is more than the value of the animal; but these considerations should not exist in human therapeutics.

PROGRESS THROUGH RESEARCH

Improvements in therapy through study of agents related to fairly effective specifics or by isolation or standardization of partially effective galenicals are too numerous to review briefly, but a few examples will suffice. The superiority of carbarsone over acetarsone and of vioform over chiniofon was demonstrated in a single cooperative study of the chemotherapy of amebiasis. Intensive study of more than 2,000 sulfonamides has resulted in development of a half-dozen which are superior to sulfanilamide for certain specific purposes. The isolation of quinine from cinchona, emetine from ipecac and more suitable chaulmoogrates from crude chaulmoogra oil are typical of the second type of research. Neither method offers as much promise as formerly, although there are still a few rather obscure galenicals which have not received appropriate attention, and there is an urgent need for further study of chemically related compounds in a few diseases of which malaria is one. Both methods have had generous support from pharmaceutical concerns, and the science of chemotherapy is indebted to these commercial interests for the factual data accumulated. The need for facts is much greater in the lines of research discussed below. Even botanical and horticultural research have more or less exhausted further possibilities of improvement in cultivation and breeding of drug plants yielding specific agents, e.g., cinchona.

Other basic fields in chemotherapeutic research have lagged, possibly because they do not offer the incentive involved in the more direct development of specifics. Thus, there are tropical diseases whose etiology is still unknown in the sense that Koch's postulates cannot be fulfilled satisfactorily, e.g.,

leprosy and dengue. While knowledge of transmission, insect vectors and intermediate hosts is chiefly applicable to other methods of control, it applies also to chemotherapy, particularly in its prophylactic aspects. Less is known concerning the pathogenesis of most tropical diseases than is desirable. The significance of this type of factual data may be illustrated by the major differences in chemotherapy of the different stages of syphilis or the different types of malaria. McKinley's monograph[3] includes a provocative summary of these factors in yaws. In addition, an appreciation has slowly developed of the influence of environmental conditions in certain diseases, notably tuberculosis[4] and amebiasis; the tropical form often takes a more rapid, malignant course and is much less responsive to agents which may be highly effective in more temperate climates. Sundstroem[5] has recently investigated the effect of a single environmental factor, altitude, on the pathogenesis of experimental leprosy, tuberculosis and trypanosomiasis.

VOEGTLIN'S THEORY

Biochemical considerations are necessary in determining the rationale of individual chemotherapeutic measures, but in the past they have usually been studied after useful agents have been found rather than serving as a guide for development of these agents. An exception may be cited in the promulgation of the arsenoxide theory of arsphenamine action by Voegtlin[6] long before clinical introduction of mapharsen. Voegtlin's contribution did much to direct attention to effects of chemotherapeutic agents on enzyme activity in the host and parasite in other diseases. Involvements of proteolytic enzymes supposedly necessary to growth of certain pathogens, and of lipase in Mycobacteria, by appropriate chemotherapeutic agents have been postulated in addition to the simpler concepts of interference with the limited oxidative enzyme systems of pathogens. That these enzyme effects of specifics may not completely describe the pharmacodynamics of chemotherapeutic action is indicated by the lack of correspondence of chemotherapeutic efficacy and enzyme inhibition among the sulfonamides. An ingenious application of enzymatic effects resulted from the isolation of ficin, a proteolytic enzyme from fig latex, which appears to be the only proteolytic enzyme against which Ascaris cuticle does not have a corresponding antienzyme; ficin is therefore an efficient ascaricide.

Relatively few studies have dealt with effects of specifics on natural defense mechanisms of the host, although it is widely accepted that such indirect modes of action are more probable than the concept of Ehrlich of direct parasiticidal effect for quinine and other specifics now available.[1] Stimulation of defense mechanisms should refer to more than effects on immune bodies and the reticuloendothelial system; as an example, one theory of the action of chaulmoogrates held that this group of specifics was effective through potentiating lipase activity in the host's tissues, resulting in lysis of the pathogens. Although this particular theory was disproven some ten years ago,[7] it remains probable that at least some of the chemotherapeutic agents act indirectly through simpler mechanisms than promoting phagocytosis or stimulating antibody synthesis. Recent interest[8] in the early pathogenesis of avian malaria immediately after inoculation may throw new light on the mechanism of the plasmodicidal activity of quinine.

USE OF EXOTIC ANIMALS

The need for suitable laboratory hosts to permit experimentation is now well known through popularized accounts of early work on yellow fever and malaria and the recent use of hamsters, ferrets and other exotic animals. Correspondence of certain laboratory infections, such as rat leprosy, avian malaria or guinea pig tuberculosis, with diseases of man is a moot point, but there is little question that much valuable information may be so obtained and that it is preferable to use animals rather than patients for therapeutic experimentation with potentially dangerous drugs. Little work has been done on the ques-

tion as to why certain species are immune to certain diseases, or on the changes involved in breeding animals to show a high immunity; but this, dealing with biologic material, is as important as studies designed to test changes in the chemical materials, as in the search for more effective agents among chemically related compounds.

CONCLUSIONS

Sollmann[1] states that in medicine "a revolt of progress" against medieval thought "was started chiefly by Vesalius, for structure; by Harvey, for function; and by Cinchona for therapy." The essential practicality of academic investigation in anatomy and physiology has long since been proven. However, in the brief scientific development of chemotherapy, since the introduction of arsphenamine, this subject has had a one-sided growth ruled for the most part by immediately practical considerations, as is usually the case when development of any group of new agents is left mainly to commercial interests. Despite the recent great advance in therapy through the discovery of the sulfonamides, it is not likely that the hit or miss methods which produced it will succeed again within any short period. It is hoped that the greater familiarity which will be gained by many physicians in regard to chemotherapeutic problems of tropical medicine during the war will create an appreciation of the need of development of chemotherapy as a science. The United States is fortunate in having a few outstanding tropical medicine centers to which personnel from medical faculties could be sent for refresher courses which would fit them to teach tropical medicine for our war needs,[9] but we lack the finely integrated, well trained groups engaged purely in chemotherapeutic research, in contrast to several imperial European countries.

Intensive studies of wound antisepsis have resulted in rapid progress in development of chemotherapeutic agents within recent months. Of the three major developments, introduction of pantoyltaurine, which acts by competing with pantothenic acid in bacterial metabolism just as aminobenzoate metabolism is disturbed by sulfonamides, represents a practical result of academic theoretical considerations; the "amidines", of which propamidine is the prototype, represent the results of the Edisonian type of research which produced the sulfonamides; and penicillin represents the sort of fortuitous discovery in which chance favors the prepared mind. It will be interesting to follow the fate of these three agents in therapy.

REFERENCES

1. Sollman, Torald: *The Cinchona Alkaloids in Medical Science, and Especially the Quinine-Malaria Reaction as a Touchstone of Chemotherapy*, Proc. Tercentenary Celebration of Cinchona, pp. 223-239, 1931.

2. Leake, Chauncey D.: *Our State, Our University, Our Health*, Quarterly of Phi Beta Pi Med. Fratern., 39: 280-284, January, 1943.

3. McKinley, Earl Baldwin: *A Geography of Disease; A Preliminary Survey of the Incidence and Distribution of Tropical and Certain Other Diseases*, Am. Jour. Trop. Med. (Suppl.), 15(5):xxv + 495, September, 1935.

4. Bungeler, W.: *Uber den Verlauf der Tuberkulose in den warmen Landern*, Deutsche Med. Wochenschr., 68: 63-66, 89-93, January 16 and 23, 1942.

5. Sundstroem, Edward S. and Michaels, George: *The Adrenal Cortex in Adaptation to Altitude, Climate and Cancer*, Memoirs Univ. of Calif., 12:viii + 410, October, 1942.

6. Voegtlin, Carl; Dyer, Helen A., and Leonard, C. S.: *On the Specificity of the So-Called Arsenic Receptor in the Higher Animals*. Jour. Pharmacol., 25:297-307, May, 1925; and many earlier papers.

7. Emerson, G. A.; Anderson, H. H., and Leake, C. D.: *Lipolytic Activity of Rat Tissues in Experimental Leprosy*, Proc. Soc. Exp. Biol. & Med., 30:150-152, November, 1932; *Lipolytic Activity of Rat Lepromata During Treatment with Various Antileprotics*, Ibid., 31: 18-20, October, 1933.

8. Schulemann, Werner: *Zur Weiterentwicklung der Malariasporozoiten im Warmbluter*, Deutsche Med. Wochenschr., 68:374-375, April 10, 1942.

9. Meleney, Henry E.; Lapham, Maxwell E., and Soule, Malcolm H.: *Report of Committee on the Teaching of Tropical Medicine in Undergraduate Medical Schools of the United States*, Jour. Assoc. Am. Med. Coll., 18:34-56, January, 1943.

PUERPERAL SEPTICEMIA DEATH RATE

In the past few years the use of the sulfa drugs has proved especially potent in controlling infection in maternity. There can be little doubt that the decline in deaths due to puerperal septicemia from 2.4 per 1,000 live births in 1935 to 1.2 in 1941, was due largely to the use of chemotherapy. For at least two decades prior to 1935 the puerperal septicemia death rate in this country showed no improvement, varying between 2.3 and 2.7 per 1,000 live births. Currently, the rate is probably less than 1 per 1,000.—Statistical Bulletin, Metropolitan Life Insurance Company.

WORK TOLERANCE RECOVERY IMPORTANT

A well-rounded program of medical supervision of the tuberculous patient has not reached completion until the patient has recovered sufficient work tolerance to permit him to take his place in economic life.—Amer. Rev. Tbr., April, 1942.

TROPICAL DYSENTERIES*

By JOSEPH S. MAXWELL, A. B., M. D.
Fairmont, West Virginia

THE dysenteries are one of the most common groups of tropical diseases. The following is an attempt to summarize the most practical points. Special acknowledgment is made of free use of Stitt's text.[1]

Diagnostic Equipment.—Sigmoidoscope, stool examination, clinical history and examination, stains, warm stage, and handbook.

Drugs. — Emetine, antimony, acetarsone (stovarsol), chiniofon (Yatren), opium, and sulfanilyl guanidine as a minimum.

Differential Diagnosis.—Amebic, bacillary, schistosome, helminth, Salmonella, typhoid, cancer, tuberculosis, and luetic dysentery.

1. Balantidiasis: The host is the pig or rat. It undermines the mucosa, the submucosa, and the muscularis. There is an eosinophilia. This is a chronic type of dysentery and there is no specific treatment.

2. Dysentery complicating malaria.

3. Dysentery complicating leishmaniasis and kala azar.

4. Coccidiosis in intestine. The spore is found in the stool. This type of dysentery is rare in man.

5. Helminthic: This is contracted from wading in, or from drinking infected water. The causative helminths are Schistosoma mansoni and S. japonica. The incubation period is from six to eight weeks. The ova, found in the stool, irritate the intestinal wall. The treatment is antimony.

6. Flagellata: Dark field examination shows flagellate, Trichomonas hominis and Giardia lamblia. There is no tenesmus.

7. Amebiasis: This is caused by Endameba histolytica. It is found all over the world. More than 10 per cent of cases occur in epidemics, as in Chicago in 1933, where it was transmitted through a faulty sewage connection. It is transmitted mainly by carriers, excreta in drinking water, flies, cockroaches, vegetables manured with human excreta, monkeys, rats, and food handlers, especially if the latter are carriers.

It shows a predilection for the large intestine, but may be found in the liver, lungs, and brain. Endameba histolytica is a phagocyte, and in fresh specimen should show red blood cells ingested, as well as active ameboid movements, if examined on warm stage. Cysts occur, which never have inclusions, but these have glycogen granules. For vital staining, Lugol's or iron-hematoxylin seem to be the best stains. The cysts are seen only in the semisolid stool. In general, if there is much, if any, fecal material in the stool, it would suggest an amebic type of dysentery, while if there is no fecal material, or only traces, it would suggest bacillary dysentery. The intestinal juices are said to destroy the trophozoites. The cysts are reported to be the only infective stage for man, and these may withstand drying of the tropical sun, but fresh specimens cannot.

The onset is less abrupt; the course is less acute and less toxic than bacillary dysentery. Symptoms may vary from a mild diarrhea to a severe dysentery, tenesmus, and colic.

Chlorination in normal concentration does not kill the cystic stage of the organism.

THE AUTHOR

Dr. Maxwell, graduate University of Pittsburgh School of Medicine, 1919; sixteen years in practice of tropical medicine, Egypt; member, American Academy of Ophthalmology and Otolaryngology; certified, American Board of Ophthalmology.

*Presented at the Roundtable Conference on Tropical Diseases, Latin-American Institute of West Virginia University, Morgantown, April 13, 1943.

Some methods of prevention are boiling the drinking water, or drinking only tea or coffee; proper disposal of infected stools; screening; elimination of rats and roaches; the study of food handlers.

The pathology includes ulcerative areas in the mucosa of the large intestine, and necrosis, with mucus shreds present in the stool. Liver abscess complications result in about 20 per cent of these cases. If there is trauma of the liver such as that produced by the prevalent alcoholism in the tropics, this is a predisposing factor.

The incubation period is from eight to ten days to two months.

The author had a patient with advanced liver abscess, which pointed in the epigastrium. Chocolate colored fluid (1,000 cc.) was aspirated, and later at operation the whole liver was only a hollow shell.

MORTALITY RATE AMONG SOLDIERS

Among untreated soldiers in the field, the mortality rate is up to 40 per cent. These cases should be treated early with emetine Gr. i should be given daily. Not more than 10 Gr. (0.65 gm.) should be given, for the drug is very toxic. This does not cure the pathology in the intestine, since there are secondary invaders. In later stages give emetine, bismuth iodide, and combine this with the chiniofon. The latter drug damages the liver. Acetarsone and vioform are helpful. Manson-Bahr likes a combination of these two drugs, especially by enemata. The writer has seen several cases of arthritis and exostoses ten to fifteen years after an unwise use of emetine. Doubling the dose of sodium hypochlorite in a Lyster bag drinking water container will give a measure of protection against amebic dysentery.

8. Bacillary: This condition is characterized by sudden onset and sudden death. It is caused by the Shigella dysenteriae, or by one of the several varieties of S. paradysenteriae, which cause—mainly by the toxin—a diffuse inflammation of the large intestine, necrosis of the mucosa, hemorrhagic infiltration of the lymph nodes, induration of the intestinal wall, hemorrhagic infiltration of the adjacent mesocolic glands, and the parenchymatous changes in the viscera.

Strong says of bacillary dysentery: "An acute, infectious disease, often characterized by sudden onset and by frequent, mucus and bloody stools, accompanied by abdominal pain and intense tenesmus. It terminates rather abruptly in death in from four to fifteen days, or by gradual improvement from which an early recovery takes place or the disease may apparently pass into a subacute or chronic stage."

The disease follows armies. It is more prevalent in Japan in epidemics than in any other country. It decimated Napoleon's army in retreat from Moscow. It slaughtered more British in World War I, on Gallipoli, than did Churchill's famous blundering in strategy. In World War I, 4 per cent of the German soldiers died of it.

The predisposing factors include: bad sanitation, lowered resistance, irritation of the bowel, climate, and the season (flies). This disease, only cholera excepted, is the worst in point of danger to the attendant on the patient. The carriers are flies, contamination due to poor latrines, unscreened mess tables, and drinking water.

The bacteriophage lyses the bacteria. This was discovered in 1917 by d'Herelle when working on Shigella dysenteriae. Bacteriophage affords an excellent means of diagnosis within twenty-four hours. Cures are likely due to it.

CHOLERA

Pathology.—In cholera the small intestine is affected; in dysentery, the large intestine is affected. Ulcerations and necrosis develop and the adrenals and occasionally the joints are involved due to the toxin. Little or no fecal material, but serous fluid with mucus and blood are found in the stool. Chronic cases have been noted.

Treatment consists of "cholera belt", bed, barley water, no milk, water with lactose, salines, sodium sulphate, purgatives, morphine, sulfaguanidine up to fourteen days, so

LIBRARY OF THE COLLEGE OF PHYSICIANS

as to avoid "granulocytosis." Cotton should be placed under the patient, and the nurse should wear gloves. Lyon in West Virginia cured 15 out of 20 cases with sulfaguanidine. Fluids also are used to combat collapse and acidosis. Kaolin and bismuth are remedies. For chronic cases Dakin's hypochlorite per rectum is helpful. Vaccines and serums are questionable.

Succinylsulfathiazole (sulfasuxidine) is reported to be active against the Shiga, Sonne, and Flexner strains and also against coliform organisms.

9. Sonne: This is caused by an organism Shigella paradysenteriae (Sonne). The diagnosis is arrived at by laboratory studies including the use of bacteriophage. The symptoms resemble those of bacillary dysentery, but are not as severe.

10. Dysentery from food poisoning: This is caused by a bacteria of the Salmonella group.

Causative organisms—S. paratyphi.
S. schottmülleri
S. suipestifer
S. enteritidis
S. aertrycke

The symptoms of all are similar. Bacillus botulinus gives no gastroenteric symptoms. "Ptomaine" poisoning is, in most instances, a misconception. The diagnosis is arrived at from the laboratory studies.

11. Cholera: This is an acute, infectious disease characterized by profuse and purging diarrhea, vomiting, muscular cramps, with suppression of urine and collapse. This is caused by the organism Vibrio cholerae in which the small intestine is chiefly involved. The diagnosis in an epidemic is easily made, and is arrived at by means of laboratory studies including Pfeiffer's phenomena.

TREATMENT

The best treatment is prophylaxis. In suspected areas never drink water unboiled. Tea is an admirable drink in the tropics because tea is usually made with boiled water. Inoculation may help for three or four months. Replace lost fluids and give intravenous saline.

SUMMARY

In the attempt to be practical and brief an exhaustive presentation has not been made, but an effort has been made to include the important features of a group of the most common diseases in the tropics.

REFERENCE

1. Stitt, E. R.; Clough, Paul W., and Clough, Mildred C.: *Practical Bacteriology, Hematology and Animal Parasitology*, Philadelphia, Blakiston, pp. xiii + 961, 1938.

CANCER SECOND IN SIXTH COLUMN

Second among that insidious sixth column of fatal human maladies stands cancer. This killer has been boring from within so long that we somehow seem to take it for granted, despite the fact that cancer destroys 158,000 of its victims each year in the United States. There are now about a half million people suffering from cancer. This is a casualty list not to be taken lightly when it is realized that the great majority of the vicitms are drawn from the age group (35 to 60 years) whose experience, maturity and earning power is of such inestimable value to our country.

The Army and Navy must bend every effort to keep as many men behind as many guns as many hours as possible. To the United States Public Health Service falls the duty of organizing and directing our national efforts toward the maintenance of the health, welfare and morale of our industrial and civilian manpower—the men and women behind the men behind the guns. As every one knows, the ratio of the industrial army to the actual combat forces is about twenty to one.

Not so much among the military forces as among industrial groups does cancer slowly but surely ferret out its victims. However, the young soldiers today will be veterans twenty years from now and will then be rapidly coming into the cancer age. Even at the present time, the United States Veterans' Administration admits to its hospitals 600 to 700 new cancer patients each month! These cases are drawn from the four million veterans of the last war. Very likely in twenty years we will have eight to ten million men and women veterans of the present war. About one in ten will develop cancer.—R. R. Spencer in Hygeia.

HOOKWORM*

By C. C. FENTON, M. D.
Morgantown, West Virginia

HOOKWORM is a human parasitic affection caused by either the Ankylostoma duodenale or the Necator americanus. A third form, of very minor importance, the Ankylostoma braziliense, a parasite of dogs and cats found in North and South America and other parts of the world, sometimes causes human infestation. The fox, bear, pig and monkey may also harbor hookworms from which man may become infected. The disease is also known as ankylostomiasis, uncinariasis and Egyptian chlorosis.

The parasites belong to the class of Nematode or Round Worms and the family of Ankylostomidae. The species Ankylostoma duodenale, the Old World form, belongs to the genus Ankylostoma, while the species Necator americanus, the New World form, belongs to the genus Necator.

There is evidence that the disease existed in ancient times. A papyrus, dated 1550 B. C., refers to some such condition. Hippocrates, about 440 B. C., also mentioned a similar symptom complex. Many hold the opinion that Avicenna, a Persian physician of the eleventh century, has given us the earliest real concept of ankylostomiasis. In 1838, an Italian physician, Dubini, discovered the parasite in the intestine of a woman who had died of pneumonia. He then found it frequently in other autopsies and named the worm Ankylostoma, from the Greek meaning hookmouth.

During the construction of St. Gothard's tunnel through the Alps, Perrencito, an Italian veterinarian, showed that the severe and often fatal anemia occurring in the workers was due to ankylostomiasis. When the tunnel was completed in 1882, the workers obtained employment in mines throughout Europe thereby widely disseminating the infestation.

THE AUTHOR

Dr. Fenton, graduate Cornell University Medical College; Fellow American College Physicians; Diplomate American Board of Pathology; American Association Path. and Bacteriologists; American Society Clinical Pathology; Professor of Pathology and Clinical Pathology, West Virginia University School of Medicine.

Owing to the fact that the form of hookworm disease found throughout tropical Africa is the prevailing form of the disease in the New World, there is convincing evidence that the infestation was introduced in America by slaves imported from Africa. Many of the slaves manifested typical symptoms.

As early as 1808, Pitt observed that dirt eating and anemia were common among the poor whites and negroes of our southern states and in 1849 Duncan emphasized the prevalence of hookworm there. Many other writers described its endemic character in the West Indies, Guiana, Bolivia and Brazil. It is likewise common in other parts of the world such as the Mediterranean region, India, China, Japan, etc.

Smith and Clayton in the United States and Ashford in Puerto Rico collected specimens of hookworms from patients which Stiles studied. From these studies, Stiles came to the conclusion that the parasite differed from the one found in Europe and named the new species, Necator americanus.

The two parasites differ in many respects. The Necator americanus is smaller and thinner than the Old World Nematode, the

*Prepared for presentation at the Roundtable Conference on Tropical Diseases, Latin-American Institute of West Virginia University, Morgantown, April 13, 1943 (From the Department of Pathology and Clinical Pathology, West Virginia University School of Medicine).

Ankylostoma duodenale. The male of the former species measures 7 to 9 mm. in length and 0.2 mm. in width, while the female measures 10 to 18 mm. in length, 0.4 mm. in width. In the latter species, the male measures 8 to 11 mm. in length and 0.4 in width, with the female varying from 10 to 18 mm. in length and approximately 0.6 mm. in width. The other differences are that the buccal capsule of the Necator is provided with two pairs of plates and a dorsal conical tooth. The buccal capsule of the Ankylostoma is larger and contains two pairs of strong hooks and two teeth. Sexual differences are also found. In the female of the Necator the vulva is located in the median third of the body, while in the Ankylostoma it is found in the distal third. It also has a tail-like prolongation which is absent in the female of the former species. The posterior ray of the bursa copulatrix of the male is bipartite in the Necator and tripartite in the Ankylostoma. The differences are of biological importance but from a clinical standpoint the symptomatology is similar.

COMPARISON OF OVA

The ova of the two species resemble each other so closely that they cannot be differentiated on microscopic examination. The ova of the Necator measure 60 by 40 micra and those of the Ankylostoma 70 by 40 micra. The eggs possess a thin transparent shell and in passing along the intestinal tract some degree of development takes place as they are usually seen in the 4 or 8 cell stage by the time they are expelled with the excreta.

When the stool is deposited on earth in the presence of oxygen, moisture and warmth, segmentation proceeds rapidly so that within two days, a small rhabditiform mole is hatched. On the third day, having reached a length of 0.3 mm., it moults. On the fifth day it moults again, remaining in its old integument. It is now a filariform larva and very active but rarely migrates more than 4 inches from its place of development. It soon becomes encysted and lives four weeks or longer.

If infected soil comes in contact with the skin, the larvae burrow through the skin. They may penetrate any part of the skin, only a few minutes being required to do so.

Looss of Cairo, in 1897, accidently infected himself by letting a drop of culture fluid containing Ankylostoma larvae fall on his hand. He was busy at the time and paid little attention to the incident, but felt some itching. On later reflection, however, he became suspicious and examined his feces at intervals. He eventually found the hookworm ova. Later, by means of experimental studies on dogs, he traced the route of migration of the larvae from the point of invasion in the skin to the development of the adult worms in the intestine.

Entering the subcutaneous tissue, they penetrate the veins or lymphatics and are carried to the lungs. They escape from the endothelium of the capillaries of the alveolar walls into the air sacs and are carried along the bronchi, trachea and larynx to the pharynx from whence they are swallowed and enter the intestine. During their passage through the body a third moulting occurs and a fourth moulting ensues in about a week after they reach the intestine. Some remain in the duodenum but most of the larvae prefer the upper portion of the jejunum, where within about four weeks they develop into mature hookworms. Mating and oviposition occur soon after.

The number of parasites necessary to produce symptoms has gained some attention. Some believe that 100 worms are necessary to produce mild effects and that 500 to 1,000 of them must be present for at least six months to cause a profound anemia.

SYMPTOMS

In the course of the disease varied symptoms appear. At the site of entrance, usually between the toes or on the inner side of the foot, there is an intense itching and burning called "ground itch" which lasts for about two weeks. If the lesion becomes secondarily infected there may be suppuration or ulceration. In the lungs petechial or larger hemor-

rhages may be caused during the period of migration of the larvae. The parasites attach themselves to the mucosa of the intestine and cause ulceration and bleeding. As they change their position from time to time they inflict further damage with resulting thickening of the submucosa.

Anemia, the most important symptom of the disease, is brought about by prolonged loss of blood. Besides the loss of blood caused by their presence, anticoagulant and hemolytic toxins are believed to be secreted by the parasites. The anemia is usually hypochromic and microcytic. The hemoglobin falls first and then the erythrocyte count. In general, the red blood cell count ranges from 1,000,000 to 3,500,000 cells, but in advanced cases it may drop below 1,000,000 with a hemoglobin about 17 per cent of normal. There is usually an eosinophilia of from 5 to 15 per cent, but counts up to 90 per cent have been recorded. In advanced cases the eosinophils tend to drop.

INDICATIONS OF ANEMIA

Signs arising from the anemia are a yellowish tinge to the skin and pallor of the mucous membranes. Further symptoms are lassitude, easy fatigue, palpitation, dyspnea, tinnitus, dizziness, mental depression and even maniacal episodes. Children are retarded mentally and physically, and rickets may complicate the picture. Their abdomens are often considerably distended to which the term "pot belly" is applied.

Digestion is disturbed and there are occasional attacks of abdominal pain. The appetite is usually very good but not in all cases. Taste is perverted in some instances with the sufferers craving such things as dirt, hair, chalk, wood or cotton. For example, in parts of Java a certain volcanic earth is kept on sale in the shops. This peculiar perversion of appetite is known as "pica" or "geophagy."

Edema may be seen about the ankles and if the condition continues untreated, effusion into the cavities or a generalized anasarca may ensue. An irregular or intermittent fever is frequently present. A complicating infection such as pneumonia may prove fatal but most deaths are usually due to the effects of the hookworms alone.

In addition to the gross changes mentioned above, at autopsy fatty degeneration of the heart, liver and kidneys is observed. The spleen is usually reduced in size and the bone marrow exhibits an increased vascularity with increase in cellular elements. If the autopsy is performed within three hours after death, the parasites may be seen clinging to the intestinal wall.

Males are more frequently victims of the disease than females. The white and brown races are more susceptible to its effects than the negro race, whose members are often immune or act as carriers. The incidence and intensity of the disease increase up to about 17 years of age after which there is a decline.

The diagnosis is made by microscopic examination of feces for ova. The worms are seldom found unless the patient has been given a vermifuge. In heavy infestations they are seen in nearly every microscopic field. When the eggs are scarce some method of concentration or even cultivation of the larvae is helpful.

TREATMENT

Many drugs are given in the treatment of hookworm disease. Thymol, betanaphthol, oil of chenopodium, hexylresorcinol, carbon tetrachloride and tetrachlorethylene are recommended.

The patient should be given a light fat-free meal the evening before treatment is begun. If constipation is present a cathartic may be necessary. On the following morning breakfast is omitted and the helminthic is administered.

Tetrachlorethylene is considered the best drug because of its ease of administration and low cost. The adult dose is 3 cc. which is followed in two hours by a saline cathartic. After taking the drug the patient should rest. The dose for children is 0.2 cc. for each year up to age 15. Carbon tetrachloride is considered the next best drug. If the disease is complicated by an ascaris infestation hexylre-

sorcinol followed by tetrachlorethylene is recommended.

Iron should be given for the anemia. Any preparation of iron such as ferrum reductum, Blaud's pills or ferrous sulphate may be used. In addition, the patient should receive a well-balanced diet rich in iron, vitamins and protein. Liver may be included.

A MAJOR HEALTH PROBLEM

In many parts of the world, including some of our southern states, hookworm disease is a major public health problem. The extent of infestation of communities is determined by examination of feces for ova. About 1900 Ashford came to the conclusion that about one-third of the deaths in Puerto Rico were due to hookworm, and in 1904 a commission was appointed to carry out measures for its control. The Rockefeller Sanitary Commission (1910-1914) made a sanitary and infestation survey of some of the southern states, and followed it by an extensive campaign of education, cure and prevention. In 1924, Smylie found that 100 per cent of those examined had ova in their stools. Manson-Bahr, 1940, found the entire population of the districts in Jamaica infested. Similar surveys show that hookworm disease is prevalent in nearly all tropical and subtropical countries. Keller, in 1940, stated that in the twenty years following the campaign of the Rockefeller Sanitary Commission, there has been a decline of 68.3 per cent in the incidence of the disease in six of the most badly infested southern states. The International Health Board has carried out similar campaigns in the British West Indies, Central and South America and other parts of the world.

The principal measure in prevention of hookworm infestation is the proper disposal of stools of patients. Contamination of soil and water should be prohibited. Feces should be burned or buried or disinfected with chemicals. Privies should be properly constructed and the population in infested areas taught to use them. The wearing of shoes is very important; the washing of hands before meals, the boiling of water for domestic purposes, and the avoidance of reinfection are also advisable measures.

CONCLUSIONS

Hookworm disease is an entity of which the causative parasites and life cycles are known. There are efficacious drugs for its treatment. Its prevention is mainly a campaign of education and prophylaxis. With these facts in mind, there are hopes that within a few generations hence it will be almost eradicated.

REFERENCES

1. Beattie, J. M., and Dickson, W. E. C.: *Textbook of Pathology*, Ed. 3, C. V. Mosby Co., St. Louis, 1926.
2. Beckman, H.: *Treatment in General Practice*, Ed. 4, W. B. Saunders Co., Philadelphia, 1942, 341-344.
3. De Rivas, D.: *Clinical Parasitology and Tropical Medicine*, Lea and Febiger, Philadelphia, 1935, 183-191.
4. Gradwohl, R. B. H.: *Clinical Laboratory Methods and Diagnosis*, Ed. 2, C. V. Mosby Co., St. Louis, 1938, 1272-1286.
5. Manson-Bahr, P. H.: *Tropical Diseases*, Ed. 9, Wm. Wood, New York, 1929, 589-600.
6. Office of the Surgeon General, War Dept.: Circular Letter No. 33, Washington, Feb. 2, 1943, 12-13.
7. Scott, H. H.: *History of Tropical Medicine*, Williams and Wilkins, Baltimore, 1939, 840-853.
8. Stitt, R. P.: *Diagnosis, Prevention and Treatment of Tropical Diseases*, Ed. 6, Blakiston Co., Philadelphia, 1942, 1251-1273.
9. Stitt, E. R. and Clough, P. W. and Clough, M. C.: *Practical Bacteriology, Hematology and Animal Parasitology*, Ed. 9, Blakiston Co., Philadelphia, 487, 496-500.
10. Todd, J. C. and Sanford, A. H.: *Clinical Diagnosis by Laboratory Methods*, Ed. 10, W. B. Saunders Co., Philadelphia, 1943, 568-573.

EYE DEFECTS LEAD REJECTION CAUSES

Eye defects were the chief cause of rejection among white 18 and 19 year old Selective Service registrants called up for physical examination by local boards and induction stations during December 1942 and January and February 1943, whereas for Negroes in the same age group and during the same period the leading cause for rejection was educational deficiency, Colonel Leonard G. Rowntree, Medical Reserve Corps, United States Army; Kenneth H. McGill and Thomas I. Edwards, Ph.D., Washington, D. C., report in *The Journal of the American Medical Association* for September 25.

The information obtained by the authors was taken from a sample of 45,585 reports of physical examination at induction received at National Headquarters of the Selective Service System and representing physical examinations of 42,273 white and 3,312 Negro registrants.

PARASITES OF LIVESTOCK IN THE TROPICS*

By J. H. RIETZ, D. V. M.
Morgantown, West Virginia

It is the popular belief among people living in temperate climates, that the hazard of parasitism is much greater in the tropics than in temperate zones and that practically all livestock in the tropics are heavily parasitized.

Among the essentials for the propagation of most internal parasites of livestock are warmth and moisture, which must have a fairly even distribution throughout the year.

Much of the earth's surface lying within the so-called tropics, possesses a seasonal variety of climate. There is a season with torrential rain, followed by a season with extremely hot and dry weather. The torrential rains have a tendency to leach the soil and wash away the ova and larvae, while the long, dry, hot season under the direct rays of the sun, is highly destructive to ova and larvae.

My personal experience with parasites in livestock on the Island of Cuba, impressed me with the fact that the incidence of internal parasites was no greater there than is found in any of the states of continental United States of America with which I am familiar. It is true that poultry which was usually confined to small lots, and swine other than those termed range raised, carried the usual fairly large quota of parasites.

Surveys of parasites of Equines made from Panama[1] and domestic animals of Puerto Rico,[2] indicate essentially the same genera that are prevalent in the states, and the species most common in Panama and Puerto Rico are also the ones most commonly found in the states.

A report from Central America and Panama[3] gives the information that range animals are quite free from gastro-intestinal parasites, but that the livestock that suffer most from gastro-intestinal parasites in the tropics are the so-called household animals that are confined to relatively small areas and often under conditions of sanitation that are far from ideal.

Babesia infection, or so-called Texas fever, in cattle, is present in all tropical countries of America and was prevalent throughout the entire southern portion of the United States, before the program of eradication of the cattle fever tick (Boophilus annulatus) was accomplished by cooperation between the States and Federal Bureau of Animal Industry.

Granting the same degree of sanitation, there is little difference between the incidence of parasites in livestock in the tropics and that in the temperate zones.

THE AUTHOR

Dr. Rietz, M. S. and D. V. M., Ohio State University; Professor of Animal Pathology, West Virginia University; at West Virginia University since 1927.

REFERENCES

1. Foster, A. O.: *Parasite Worms of Equines in Panama*, Vol. 3, No. 2, Proceedings of the Helminthological Society of Washington, July, 1936.
2. Van Volkenburg, H. L.: *Check List of Parasites Found Among Principal Domestic Animals of Puerto Rico*, Vol. 3, No. 1, Proceedings of the Helminthological Society of Washington, January, 1938.
3. Hall, Maurice C.: *The Parasite Problems of the Livestock Industry in the United States and in Central America*, Vol. 23, No. 6, Journal of the American Veterinary Medical Association, March, 1927.

*Prepared for presentation at the Roundtable Conference on Tropical Diseases, Latin-American Institute of West Virginia University, Morgantown, April 13, 1943 (From the Agricultural Experiment Station and Department of Animal Pathology, West Virginia University).

High protein breakfasts create a sense of well-being and a sustained increase in the metabolic rate, while obviating symptoms of hypoglycemia.—The Detroit Medical News

WAR MALARIA: ITS SIGNIFICANCE IN CIVILIAN PRACTICE*

By MAJOR RALPH H. KUNSTADTER (MC) AUS

To the physician who enters the Army from civilian practice, "War Malaria" has additional significance. Two major problems must be solved on the home front: the recognition and adequate treatment of the disease, and the carrying out of malaria control.

Some idea as to the magnitude of the problem in general has been repeatedly emphasized. Recently Coggeshall[1] has emphasized the world-wide importance of malaria, and states that even during normal periods it is considered the most permanent of all diseases and probably ranks foremost as the cause of morbidity. Williams,[2] in 1938, estimated that the number of infections in the United States varies annually from one to six million; the average is believed to be four million cases. In the United States, it is of moderate endemic intensity in the sixteen southeastern states, with brief periods of high endemicity accompanied by scattered epidemics at intervals of approximately seven years.[2] Occasional cases of malaria are reported elsewhere in the United States, but their significance has been chiefly of academic interest. Now that many of our soldiers are returning from tropical areas infected with malaria, the problem in this country assumes greater proportions. Dissemination of this disease by carriers throughout nonmalarial communities is inevitable inasmuch as there is a great increase in the infection rate. Thousands of troops returning from the Southwest Pacific are infected with malaria. Coggeshall[1] states that more than fifty per cent of our men are infected. In recent months, the burden has become even greater as men are now returning from Africa and the Mediterranean carrying this disease. "The return of infected troops to hospitable territory is likely to result in the initiation of serious epidemics, especially in those places where control efforts are lax in the control of malaria."[1] Also, dispersal of sick troops allows for the establishment of epidemics over long periods even in malarial areas and there is no means of halting the spread by immunization procedures.[1] Further difficulty arises when infected men return to their homes on furlough or following discharge from the service. Malaria will be carried into areas where this disease has previously been insignificant. The anopheles mosquito, vector of malaria, is present as far west as the Pacific coast, as far north as Canada and along the eastern seaboard, so that no state or community is immune from this disease.

Other problems arise as a result of mobilization and redistribution of civilian population in defense industries. Over-populated areas, crowding and poor sanitation, particularly in the endemic regions, make malaria control a more serious task. With a great increase in the incidence of malaria, the disease will become a problem for all physicians.

Many physicians in nonmalarial areas of the United States are familiar only with the typical textbook description of the disease; many have never seen a case of malaria. Therefore, it becomes paramount that they should be familiar with malaria in all its clinical aspects so that subclinical and atypical cases will not go unrecognized.

Malaria may simulate any disease and some surgical conditions.[3] The subtertian form of acute malaria in particular may pre-

THE AUTHOR

Major Ralph H. Kunstadter, M. C., graduate University of Illinois; interned Michael Reese Hospital, Chicago; Licentiate American Board of Pediatrics; American Academy of Pediatrics; Chief, Communicable Disease Section, Ashford General Hospital, West Virginia.

*Presented before Kanawha Medical Society, Charleston, West Virginia, September 14, 1943. Publication authorized by the Surgeon General, War Department, Washington, D. C.

sent predominantly cerebral, gastro-intestinal or pneumonic manifestations and the chronic form may mimic almost any chronic disease. Strong states, "One should always keep in mind the possibility that pain in the appendix region or in the gallbladder may be connected with malaria if in the tropics."[4] Some cases of malaria have been described as bilious remittent fever, and others resemble bacillary dysentery, typhoid fever, acute pancreatitis, nephritis, and various diseases of the central nervous system including epilepsy, epidemic meningitis, and encephalitis.[4 5] The British War Office says that it is instructive to note that cases sent from the Gallipoli Peninsula and definitely diagnosed as malaria in Alexandria were provisionally labeled typhoid or paratyphoid fever, influenza, rheumatism, and simple continued fever.[6] Fereaud describes ten interesting cases observed in a general hospital in Cuba. The forms of the disease illustrated are epileptiform, dysenteric, cerebral, blackwater and rheumatic fevers. One case simulated appendicitis.

CASE REPORTS

To illustrate the bizarre nature of malaria and the diagnostic problems that frequently arise, the following case abstracts are presented:

Case 1.—Estivo-Autumnal Malaria Resembling Bacillary Dysentery: A 32 year old soldier was admitted to the hospital on August 5, 1943 with a history of continuous fever and abdominal pain for nine days and intermittent vomiting for from two to three days. Watery stools were present for the first two days of his illness followed by constipation for the next seven days. He had received one prophylactic inoculation against typhoid fever in May, 1943, and he stated that he had never had malaria but had received atabrine off and on during the past few months.

Physical examination revealed an acutely ill male, toxic in appearance, drowsy, and complaining of severe abdominal pain and headache. The temperature was 104 F., pulse 108 and respiration 32. The tongue was dry and moderately coated with brownish material. He appeared dehydrated. There was slight icterus of the bulbar conjunctiva; the lungs were clear; the abdomen was distended, tympanitic and doughy in consistency. There was generalized tenderness but no rigidity. The spleen was not enlarged. Thick and thin smears for malaria were negative. The leukocyte count was 4,550 with 72 per cent neutrophils and 28 per cent lymphocytes. The urine was negative. During the next twenty-four hours his temperature dropped to 100.4 F. in the morning but rose in the afternoon to 103.6 F. There were no chills. Smears for malarial parasites were again negative. A blood culture revealed no growth. He had been taking only water and fruit juices for the past three days and a stool specimen was obtained following an enema. Because of repeated vomiting and dehydration, intravenous infusions of 5 per cent glucose and saline were administered. On the third day the stools became liquid and he was slightly stuporous. At this time the blood picture revealed many ring forms of P. falciparum. A dramatic improvement followed the administration of quinine. His temperature fell to normal, his sensorium cleared and abdominal discomfort and vomiting disappeared. Culture of the stool specimen revealed no pathogenic organisms.

Case 2.—Estivo-Autumnal Malaria Resembling Acute Influenza: A 40 year old soldier was admitted to the hospital on August 15, 1943, complaining of pain in the right lower chest which became worse on coughing, headache, generalized aching, and continuous fever during the past few days. There had been no diarrhea, sore throat or chills. There was no previous history of malaria.

Examination revealed a temperature of 101.5 F., pulse 88 and respiration 24. The pharynx was slightly injected and a few moist râles were heard over the left chest posteriorly. The abdomen was soft, there was no tenderness or rigidity, and the spleen was not enlarged. On the following day, his temperature was still elevated, he was coughing and herpes labialis was present. X-ray of the chest revealed no abnormal findings. Examination of the blood revealed a leukocyte count of 5,000, neutrophils 80 per cent, and lymphocytes 20 per cent. The urine was normal.

His course remained unchanged and his symptoms were strongly suggestive of acute influenza. On August 8, examination of the blood revealed numerous ring and crescent forms of P. falciparum. Following the administration of quinine, there was a dramatic improvement in his clinical picture. His temperature dropped to normal and remained so.

His headaches disappeared and the coughing subsided.

Case 3.—Tertian Malaria Resembling Acute Catarrhal Jaundice: A 30 year old soldier was admitted to the hospital on July 26, 1943, with the history that he had developed syphilis in April, 1943, and had been treated with arsenicals. Following four injections within the course of ten days, he had developed fever and jaundice and a diagnosis of arsenical hepatitis had been made. Anorexia, weakness, and upper abdominal pain were present. There were no chills or vomiting and no history of tropical disease.

At the time of admission to the hospital, his temperature was 101.5 F. He appeared acutely ill and there was moderate icterus. The liver was enlarged and tender and the abdomen moderately distended. His temperature remained elevated for the following three days. His Kahn test was negative. Examination of the urine revealed the presence of bile. Examination of the blood revealed erythrocytes 3,400,000, leukocytes 6,200, neutrophils 64 per cent, lymphocytes 36 per cent. The icterus index was 20 and the Van den Bergh reaction indirect was positive. Thick and thin smears for malarial parasites were negative from July 26 to July 29, 1943. There were no chills. On July 29 a blood smear was positive for P. vivax. Quinine was administered and his temperature immediately returned to normal. A remarkable improvement in his general condition was evidenced by the disappearance of abdominal pain, increase in appetite and continued normal temperature. The liver gradually decreased in size and the jaundice subsided. Although this soldier had a hepatitis due either to intravenous arsenicals or infection, he was convalescing from this at the time he developed acute malaria and the entire picture became confused.

Case 4.—Tertian Malaria Resembling Acute Catarrhal Gastritis and Acute Appendicitis: A 34 year old soldier was admitted to the hospital on April 6, 1943, on the orthopedic service, for treatment of a gunshot wound of the knee. He had had his first attack of malaria while on Guadalcanal in December, 1942. On April 8, 1943, two days after admission, he developed nausea, vomited once and complained of pain in the abdomen. His oral temperature was normal. He was suspected of having acute appendicitis and an ice bag was applied to the abdomen with some relief. A blood examination revealed leukocytes 10,000, neutrophils 76 per cent, lymphocytes 19 per cent. Smears for malaria revealed no parasites. The urine was normal. There was some tenderness in the mid abdomen. The liver and spleen were not enlarged and there was no tenderness over these organs.

During the next two days, he complained of abdominal cramps, with frequent nausea and belching; there was no vomiting. Repeated smears for malaria were negative. A diagnosis of acute, catarrhal gastritis was entertained. On April 10, 1943, complete gastro-intestinal x-rays, including gallbladder studies, were done with no abnormal findings. Within the next few days, the symptoms gradually subsided and he felt well until April 17, 1943, when he complained of generalized aching, abdominal pain, nausea and vomiting. His temperature was 101 F. There was slight tenderness in the epigastrium and also in the right lower quadrant. The lungs were clear. A diagnosis of probable acute appendicitis was made. However, within a period of one hour following examination he developed a chill and his temperature rose to 104 F. At this time a blood smear was positive for ring forms of P. vivax and his leukocyte count was 9,500, with 80 per cent neutrophils and 20 per cent lymphocytes. He received a full course of atabrine and plasmochin following which his abdominal symptoms and fever disappeared during the first twenty-four hours.

Case 5.—Estivo-Autumnal Malaria Resembling Appendicitis: A 24 year old soldier was admitted to the hospital on April 6, 1943, with a diagnosis of cerebral malaria. His first attack of malaria occurred on Guadalcanal in November, 1942. Subsequently, he had six relapses—one characterized by a four day period of coma beginning on January 29, 1943.

On April 15, 1943, nine days after admission, he complained of nausea with pain in the right lower quadrant of the abdomen. His temperature was 99 F., pulse 84 and respiration 24. Examination revealed tenderness and slight increase in resistance over McBurney's point. The spleen was not enlarged or tender. The stools and urine were normal. A blood count revealed leukocytes 12,000, neutrophils 75 per cent, and lymphocytes 25 per cent. Thick and thin blood smears for malaria were negative. In view of the past history of malaria, surgical intervention was withheld. The abdominal pain and sensitivity subsided in about thirty-six

hours. His appetite remained poor and he did not feel normal. During the next few days he was ambulant and complained of some indigestion and fatigue. On April 23, 24 and 26 the blood was positive for ring forms of P. vivax. He received atabrine, his symptoms gradually disappeared, and the blood became free of parasites.

These cases represent just a few examples of atypical malaria and a wider variety of symptoms may occur in other cases. Many patients are admitted to the hospital with "fever of unknown origin" and examination reveals no abnormal findings. Practically all malaria we have seen has been in soldiers who have been returned from overseas and have been treated for one or more attacks; at some time in the past they have received suppressive therapy. Although there is no direct evidence, it is possible that previous treatment modifies the disease so that subsequent relapses appear with atypical symptoms.

DIAGNOSIS

It is not within the scope of this paper to consider in detail the differential diagnosis of malaria. There are, however, certain features of the disease worth mentioning in considering diagnostic problems.

A thorough history is paramount in establishing a diagnosis. Any soldier who has returned from tropical service must be considered as a carrier of malarial parasites regardless of whether or not he has received active treatment for previous attacks, or has had suppressive therapy. It is important to remember that malarial relapses frequently occur following fatigue, extreme physical exertion, after surgical operations, change in weather and climate, excitement and following alcoholic and sexual excesses.

A careful physical examination should exclude a surgical condition. Abdominal tenderness is often migratory and at times generalized but not persistent. Maximum tenderness is usually present over the spleenic and hepatic regions. Muscular rigidity is usually absent, and when present is not persistent—an important consideration in excluding acute appendicitis. Rectal examination reveals no significant findings. An enlarged spleen is an important presumptive sign. An x-ray of the chest should exclude pulmonary pathology. Direct examination and culture of the stools will usually exclude typhoid fever, dysentery and parasitic disease. Blood cultures and agglutination tests may be necessary to eliminate typhoid fever, brucellosis and septicemia.

Direct examination of the blood is of utmost importance in establishing the diagnosis of malaria and for excluding other parasitic diseases. It may be necessary to examine thick and thin smears repeatedly, at different times of the day, as frequently single smears fail to reveal the parasites. Good staining technique is essential. In the preague stage of acute malaria the leukocyte count is often normal or slightly elevated and the distribution of cells is normal. In the postague stage, and in chronic malaria, there is a leukopenia and an increase in the mononuclear cells. Severe hypochromic anemia may occur following repeated acute episodes, particularly in subtertian infection, and in chronic malaria.

MILITARY CONTROL

The Army does its best to safeguard the health of troops in combat and in training camps. Malaria control is carried out when and wherever possible. Methods are initiated to destroy or curtail the development of the larvae and adult development of the malaria mosquito. Measures to protect man from the mosquito and treatment with chemical agents are carried out. Special malaria survey units of the Sanitary and Medical Corps are active and cooperative in the field. In spite of all of these measures, malaria cannot be entirely prevented and "as yet we have no drug that will prevent or reduce the large volume of malaria that is constantly increasing."[1]

From a civilian standpoint, the United States Public Health Service has worked out a plan for state-wide malaria control which has four objectives: elimination of the major foci of infection in each county, prevention of man-made malaria, maintenance of existing

and institution of new control projects, and an educational campaign.[2] During the present war, this program has necessarily been intensified.

It is the obligation of the medical profession to carry out this plan by working with national, state and local medical societies. Educational programs informing the public as to the hazards of this disease, the necessity of cooperating with the health authorities, and the importance of receiving medical care for obscure illness must be emphasized. It is the responsibility of the individual physician to recognize malaria, adequately treat it according to latest accepted methods and encourage the practice of malarial discipline by those being treated in malaria areas. Malarial discipline signifies protection against the mosquito by staying away from breeding places such as swamps, lakes, rivers, streams, etc., remaining in screened enclosures from sundown to sunup, sleeping in mosquito nets if buildings are inadequately screened, and the use of repellents and protective clothing when it is necessary to be present in areas infested by anopheles mosquitoes.

The increasing danger of transmitting malaria by blood transfusions and intramuscular injections, must be realized.

REFERENCES

1. Coggeshall, L. T.: *Malaria as a World Menace*, J.A.M.A., 122:8, May 1, 1943.
2. Williams, Louis L.: *The Anti-Malaria Program in North America*, Publication 15, American Association for the Advancement of Science, p. 367.
3. Belding, David L.: *Textbook of Clinical Parasitology*, 1942, p. 207, D. Appleton - Century Company, New York.
4. *Stitt's Diagnosis and Prevention of Tropical Diseases*, 1943, Vol. I, pps. 77, 90, The Blakiston Company, Philadelphia.
5. Fraser, D. M. M.: *Symptomatology of Malaria*, British Medical Journal, July 17, 1943, p. 86.
6. *The War Office Memoranda on Medical Diseases in Tropical and Sub-Tropical Areas*, (Great Britain), Chemical Publishing Company, Ind., Brooklyn, 1942, p. 142.
7. Fereaud, Castulo: *Tropical Disease Bulletin*, London, 40:431, June, 1943, abstr.

Utopia is a long way off and you and I will never see it, but if we are smart enough to carry out what is envisaged under the Four Freedoms we will find material rewards as well as social advancement.

Tuberculosis Abstracts

Furnished Through the Courtesy of the West Virginia Tuberculosis Association

"There is great satisfaction to the physician, and great benefit to the community, in having made an early diagnosis and instituted treatment in a case of tuberculosis, and having perhaps found a second case among the family contacts." So says Dr. Sartwell in his thoughtful article discussing the opportunity confronting the private practitioner as a result of the growingly popular mass chest x-ray surveys of American men and women. The danger inherent in purely roentgenographic diagnoses is stressed, but primary emphasis is rightly laid upon the painstaking follow-up and supervision the family doctor owes to every patient about whose lungs the x-ray has raised even a suggestion of doubt.

The Family Physician Holds the Ace Card

Increasingly, family physicians may expect to see numbers of men and women who have been told that they have tuberculosis and referred to their own doctors for advice, treatment or further study.

These cases are the product of widespread and ambitious programs of mass chest x-raying in Army and Navy inductions, in industrial plants, in colleges and among other groups. In Massachusetts the Army alone has rejected for military service more than 2,000 men because of actual or suspected pulmonary tuberculosis.

A system has been set up in Massachusetts that works very well and that has its counterpart, with various modifications, in many areas of the United States. The names and addresses of rejectees are forwarded from the examining station to the Department of Public Health. The state district health officer, working through the local board of health, pursues a follow-up that attempts to secure answers to important questions on each such rejectee.

Has the patient been x-rayed again? If so, by whom? What were the findings? Was the diagnosis of tuberculosis confirmed? If so, has the case been reported? What further study or treatment has been recommended, and is it being carried out? If the diagnosis was confirmed, how many household contacts have been x-rayed and what are the names of any found to have tuberculosis?

In the case of industrial surveys, with the patient's cooperation a roentgenographic report is sent by the Department of Public Health to the

designated family physician. Only in instances where the patient says he has no regular physician or does not intend to consult one is attendance at a tuberculosis clinic suggested as an alternative to private care.

Cases reaching the doctor through these channels of reference fall into several groups:

1. Active Tuberculosis: This is the simplest, perhaps, as these people need prompt sanatorium care, possibly collapse therapy as well. Repetition of the x-ray may be unnecessary, if the diagnosis is clear-cut. Three necessary steps include: reporting the case, arranging for admission to a sanatorium and examining by x-ray all household contacts. It should be emphasized, however, that diagnosing and reporting tuberculosis solely on the basis of x-ray evidence can result in serious errors.

2. Suspected Tuberculosis: In the light of an x-ray opinion this usually means that the roentgenologist has seen a small hazy or infiltrative shadow but is not sure enough of its presence or significance to label it pulmonary tuberculosis. Invariably these patients need another film. Improved technic may be sufficient to settle the question. Disappearance of the suspicious lesion may indicate it was of acute pneumonitic origin. Generally, however, this new film—since the original is rarely available—becomes the first of a progress series by means of which a suspicious area is to be observed. Symptoms and physical signs are more likely to be lacking than elicited in such early cases. Exhaustive clinical and laboratory study is indicated. While a sputum or gastric sediment containing tubercle bacilli is sometimes found and is clinching evidence of tuberculosis when confirmed by culture or animal inoculation, such things as a shift in the differential leukocyte count, accelerated red blood cell sedimentation rate and slight rise in temperature late in the day are of confirmatory value only, as they are not specific for tuberculosis, nor is their absence proof that a lesion is either non-tuberculous or inactive. Most valuable aid in following and evaluating all such cases is the procedure of serial x-ray filming at appropriate intervals.

3. Inactive or Healed Tuberculosis: Most of the measures advocated for Group 2 above apply with equal force to this third category. An initial film is always advisable and full study and periodic filming is essential whenever there is the slightest doubt about the true status of the lesion, especially in young subjects or where a lesion is beyond the minimal limits. It should be recalled that the classification of minimal, moderately advanced or far advanced refers solely to the extent of the involvement, not to the activity of the process. Physicians should acquaint themselves with the groupings of patients according to clinical status as set forth in "Diagnostic Standards," published by the National Tuberculosis Association. However, it must be realized that no such exact classification as apparently cured, arrested, apparently arrested, inactive and active can or should be attempted from examination of a single x-ray film. Even to try to grade cases as active or inactive on such a basis leads to many errors, although the visualization of cavities allows no question that activity is present.

4. Primary Phase Tuberculosis: This diagnosis is common but clinically not important in adults. Rarely is it active, usually being of the calcified primary complex type. Nevertheless, it is essential that the physician make certain his case is clearly in this category before so dismissing it.

5. Pleurisy With Effusion: This is rarely discovered in mass surveys. Evidence of old attacks commonly shows up, but means little if none has occurred within five years.

6. Non-tuberculous Conditions: These are fairly frequently encountered. A few may be mistaken for tuberculosis, but careful study will usually reveal the true nature of shadows caused by such conditions as atypical pneumonia, bronchiectasis, atelectasis, suppurative lung abscess, lymphoma, sarcoid, cystic disease of the lung and primary or metastatic lung cancer. Emphysema generalized pulmonary fibrosis and spontaneous pneumothorax should not be too difficult of recognition. Abnormal cardiac silhouettes often give the clue to unsuspected heart lesions, while developmental anomalies of visceral or skeletal nature are of passing interest.

* * * *

It should be remembered that tuberculosis is a disease of adults and is seldom found in children after infancy and before adolescence; that its prevalence tends to increase with age from adolescence on; that the frequency of inactive disease also increases with age; that the majority of reinfection-type lesions found in young persons are unstable; and that many lesions in older persons are a greater source of danger to their associates than to themselves.

It is highly important that private practitioners make the early diagnosis that confers greatest benefit on the patient, his family and the commu-

(Continued on page xxx)

The President's Page

Is the medical profession ready to meet the issue that confronts it today? In answer to this question I think it might be well to repeat here a part of a letter received from one of our members now with the armed forces. These remarks were incorporated in an editorial appearing in the August, 1943, issue of THE JOURNAL. Likewise, they were emphasized by our friend, Dr. Roy Bird Cook, of Charleston, in his presidential address before the American Pharmaceutical Society at Columbus, September 6, 1943:

"It has been my observation," writes this doctor, "that some of these most vociferous in their protests against 'socialized medicine' have been the very ones guilty of the practices that have been bringing the issue to a focus. Moreover, it would appear that their understanding of the fundamentals behind the whole trend is quite superficial. They have lost sight of the fact that change is one of the fundamental laws of the universe. Instead of trying to direct that change into the right and most desirable channels, they have been blindly and dogmatically bucking the whole issue.

"Change there should be, and I'm not so certain that much of it may not be salutary. The point paramount is to direct that change intelligently, patiently and yet positively to the end that the medical profession may not descend to a mediocre level and the service rendered the people is not likewise of an inferior quality. No scheme can be ideal for any group; it must or should be a balance that promises the greatest value for the greatest number. Why do we resist change rather than try to direct it as nearly aright as is humanly possible?"

Until such time as the physicians of America can appreciate the real meaning of this message it will be difficult indeed to promulgate a program that will solve all of our problems.

In his presidential address, Dr. Cook said:

"As a matter of fact, the whole field on all sides is faced with the threat of having the public health instrumentalities regimented and controlled by the state. It is our duty to do our part, and the duty of the whole field of medicine to support any sound move to protect the public. The public, on the other hand, is bound to be attracted by any scheme or plan that carries some promise, no matter how visionary, of some social betterment. And indeed the social planners have not been idle at all. Senate Bill No. 1161, the so-called Wagner-Murray Bill, now before the Senate Committee on Finance, is an example of what may follow.

"This bill, carried along on the wings of a disguised social security need, would at once set up an annual payroll tax of approximately twelve billion dollars, half payable by employees and half by employer, which, of course, would influence in some way the financial structure of some 82,000 pharmacists in one direction or another. It provides that every individual insured is to receive general medical care. The physicians would be brought under control first and it needs no crystal gazer to point out that pharmacists would follow."

By the time this message reaches you, our Fact Finding and Planning Committee will have made its first report and the Council will have rejected or officially approved the recommendations. Are you now willing to forego individual greed and petty jealousies to the end that we can unanimously endorse a program that affords protection to both our profession and the public?

There exists today in some parts of our state an acute shortage of doctors. Why not endorse a plan whereby our Public Health Council may issue a certificate to a refugee physician entitling him to practice under the direct supervision of a licensed physician, such certificates to be renewed at each succeeding meeting of the Council, and to be revoked at the will and pleasure of the Council, and in no event to be valid after the emergency has passed. This can in no way jeopardize the future practice of medicine in our state and at the same time it will be the means of rendering real assistance to some of our overworked doctors and to refugees alike.

Write the members of our Public Health Council concerning your views on this very vital subject. Remember, it is better to issue certificates to these men than to have the United States Public Health Service enter the field of medical practice.

President.

West Virginia Medical Journal

Official Journal of
The West Virginia State Medical Association
302 Atlas Bldg., Charleston, West Va.

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Editor Emeritus

James R. Bloss, M. D. . . . . Huntington

Business Manager

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Published monthly on the first day of the month, at Charleston, by The West Virginia State Medical Association.

Original articles are accepted on condition that they are contributed exclusively to the Journal.

Advertising rates furnished upon request. All advertisements must conform to the standard established by the Council of Pharmacy and Chemistry of the American Medical Association.

Address all communications to Business Manager, West Virginia Medical Journal, Box 1031, Charleston, West Va. Phone, Capitol 34-625.

SUBSCRIPTION $3.50 PER YEAR

Entered as second-class matter, January 1, 1926. Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917. Authorized July 24, 1919.

CONFERENCE ON TROPICAL DISEASES

Under the sponsorship of various governmental agencies, Latin-American Institutes have been held at a number of American universities, to promote better understanding of our relations with countries south of the Rio Grande. West Virginia University was selected for one of the meetings through the efforts of Professor Warren F. Manning of the Department of Romance Languages. This institute was held in Morgantown in April, 1943.

An unusual feature of the institute at West Virginia University was the inclusion of a conference on tropical diseases. Three of the four papers presented at this conference are given in full elsewhere in this issue.

War has intensified interest in tropical diseases and has brought certain obvious but formerly poorly recognized facts to the attention of physicians generally. The absurdity of military aggression while large areas of "Lebensraum" still require conquest of endemic diseases to make them habitable for civilized man is apparent. Repercussions of military campaigns in tropical regions upon progress in diagnosis and therapy of tropical diseases are to be expected, if only through bringing to bear the modern viewpoint of our Army physicians.

Potential health hazards on return of our service men necessitate a good practical diagnostic knowledge of the common tropical diseases for all physicians, regardless of the climate in which they practice. Poor social-economic status is responsible for the high incidence of many diseases in the tropics—for example, the one and a half million cases of malaria in India and the conditions in certain South American countries. Postwar planning must take these circumstances into account, particularly in view of the prospect of long term policing of certain tropical regions by our troops. Finally, with our men serving in Alaska, Greenland and Iceland, the concept of geographical medicine, of which tropical medicine is a part, should become better recognized, and the whole problem of the influence of climate on diseases should advance accordingly.

These and other factors were discussed at the conference during April. The most urgent problem, clinically, would seem to be that of a wider dissemination of already established knowledge among general practitioners. In this regard, it may be noted that the School of Medicine of West Virginia University is aware of its responsibilities to the physicians of the state, that the medical collection in the University library has been augmented by a considerable expenditure for current authoritative works on tropical medicine, and that the package service of the library is available to any physician within the state.

THE MENACE OF MALARIA

Since the dawn of recorded history periods of major warfare have been accompanied or followed by pestilence involving both martial and civilian segments of the population, and the present titanic struggle bids fair to be no exception to the general rule. The so-called tropical diseases are not, strictly speaking, limited to the tropics, but are often noted far

outside the torrid zone. Malaria, which, including all its varieties, constitutes the major segment of tropical medicine, has been one of the outstanding medical problems with which man has had to contend.

The *plasmodium malariae* has been scattered widely in temperate latitudes owing to the habits of its insect vector, the anopheles mosquito, and this fact has had a marked influence on the history of civilization.

One of the essential causes of the downfall of Rome was the very heavy incidence of malaria in the Italian peninsula, and certainly the tiny plasmodium had much to do with the production of the frog pond which now occupies the site of the temple of the Great Diana of the Ephesians. Whether Columbus brought malaria to America or not is a moot question, but the probabilities are that he actually had the disease on his second voyage and was even for a time comatose from it. Certainly paludism has been endemic in the south since the time the white settlers first landed on the Atlantic coast, and it is only within recent decades that scientific medicine has made an appreciable lessening of its incidence.

Major Kuhnstadter's paper in this issue of THE JOURNAL calls attention to the fact that malaria is a great masquerader. This is especially true of *P. falciparum* infections, the type most likely to be found among returning soldiers who may act as carriers and account for infections among the civilian population.

The treatment of malaria has become definitely specific. No longer does one attempt a cure by wearing "a spider hung around the neck in a nutshell," as Longfellow depicts in Evangeline, but quinine, atabrine (quinacrine) and plasmochin (pamaquine naphthoate) are specifics, the first two being toxic to the asexual forms and the third to the sexual forms of the parasites. It is in the falciparum infections that plasmochin is especially efficacious. Johnson has recently experimented with sulfadiazine in induced malaria and has reached the conclusion that it is effective, certainly in quartan infections.

It is imperative that physicians in civilian life familiarize themselves with the various malarial syndromes, the diagnosis by blood smear, and especially the treatment. The falciparum infections are very likely to be resistant to therapy. For the past three decades malaria has been seen so rarely in West Virginia as to lull the physician into a sense of false security, so to speak, and to make him forgetful of the disease and its manifestations. Hence, restudy of malaria is a prime necessity for each of us.

TO THE COLUMNISTS

The journalistic column, a variety of literature now fully developed, has gradually become more potent not only in furnishing the reader entertainment and enlightenment, but in molding public opinion as well. While we could not agree with much that the major columnists of today publish, many of them seem really impressed with their responsibility as leaders of thought and often they present essays which are literary classics and outstanding examples of sound reasoning and practical common sense. Two recently published certainly fall within this category.

Ordinarily the lay writer either is not well enough versed in things medical and hygienic or does not give the subject the necessary study to produce a column of sufficient exactitude to appeal to a physician. Not so with Mr. Westbrook Pegler. His recent "Dosing Ourselves on Prime Cures" should be read by every layman in the country, especially radio fans, and every physician could profit by conning it closely. The shade of Harvey W. Wiley must have applauded from spirit land.

The second to which we refer is Mr. Paul Mallon's discussion of Senate Bill 1161, an embryonic legislative monstrosity which should result in a fetus sanguinolentis, or at least in an abortion. Mr. Mallon evidently understands thoroughly what a devastating

effect the enactment of the medical section of this bill would have on medical care and research, and upon the welfare of the populace generally.

We welcome such discussions by enlightened lay journalists who take the time and trouble to study through the problems confronting American physicians today.

CINCINNATI HOST TO S. M. A.

West Virginia has always been well represented at meetings of the Southern Medical Association. Last year at Richmond over sixty doctors were registered from this state. The number this year should be much greater, as Cincinnati is but a few hours away by train for doctors located in the northern, central and southern sections of the state.

The meeting in November offers the busy doctor an opportunity to combine relaxation with what will amount to a refresher course in medicine and surgery. At a time when extended vacations are not possible, every doctor should make an effort to get away for a few hours to attend one or more of the interesting and important scientific sessions arranged for this meeting.

AUXILIARY ON FIRING LINE

Too much praise cannot be bestowed upon the members of the Executive Board of the Woman's Auxiliary to the West Virginia State Medical Association for their prompt and unanimous response to a call for front line work in the educational campaign proposed by the Fact Finding and Planning Committee. There was not a dissenting voice raised in the meeting of the members held recently at Charleston. On the contrary, speaking for the county auxiliaries, the officers and board members enthusiastically agreed to full participation in the campaign planned for this fall and the coming winter.

The Auxiliary has agreed to sponsor a speaking program before clubs, societies and other groups for the purpose of bringing home to their members the importance of waging a fight against un-American legislation that affects not only medicine, but threatens the very foundation upon which free enterprise among the people of this country is built.

Mrs. John P. Helmick of Fairmont, President of the Auxiliary, and the progressive members of her executive board, are to be commended for the stand they have taken at a time when organized, intelligent, and spirited action is needed.

INCOME TAXMANIA

The old battle cry, "there ought to be a law against it," most aptly applies to the new income tax regulations. The wording of the various provisions is presumably understandable only to tax experts, C. P. A's. and lawyers, and even the tax experts cannot agree among themselves in the interpretation of some of the wordy clauses. The question in the minds of the hundred million or more taxpayers is, who does understand the new regulations?

The Ruml plan would have been the answer to the taxpayer's prayer for a simple form of income tax payment. As it is, we not only pay as we go, but before we go, and even before we know where we are going. Instead of using language in the forms that can be understood by those who are paying the freight, the payrollers at Washington have succeeded in evolving for the taxpayer at home the zaniest, most nonsensical and meaningless set of income tax regulations that have ever been issued since the inception of the income tax program three decades ago.

OLD AGE AND WISDOM

From the period of the council of the Sanhedrin to the present time, old age and wisdom have been almost synonymous. Where senescense fades into senility has never been determined by measurements in years. Indeed, the individual, except for his ancestors, determines it for himself. — A. J. Mooney, Sr., M. D., in The Journal of the Medical Association of Georgia.

NO ROOM FOR BEVERIDGE PLAN

Reports received from every section of the state indicate that doctors are determined to leave not even a pebble unturned in their efforts to bring about the defeat of the American Beveridge Plan as embodied in the Wagner-Murray bill, (S. 1161).

We have heard much of grass roots sentiment. This is the sentiment of the folks back home. And, these folks are beginning to wake up to the evils of a socialized this and a socialized that. There is no room for a Beveridge plan in America, but if this movement towards socialized medicine is to be stopped dead in its tracks, if this vicious bill is to be killed a-borning, the doctors not only in West Virginia but throughout the country must be willing to lend their aid.

The time to act is now, right this very minute. If you have not written your representatives in Congress, do so today. Tomorrow, next week, or next month may be too late.

SOUTHERN MEDICAL AT CINCINNATI

The annual meeting of the Southern Medical Association will be held at Cincinnati, November 16-18. Headquarters will be established at the Netherland-Plaza Hotel. A late survey indicates that there are still good rooms available at downtown hotels in Cincinnati, but reservations should be made promptly.

An attractive program has been arranged for the three-day meeting. While the meeting will be held in Cincinnati, the host society will be the Campbell-Kenton County Medical Society of Kentucky, with the Cincinnati Academy of Medicine serving as co-host.

DR. GRISINGER NAMED ON COMMITTEE

Dr. George F. Grisinger of Charleston, has been appointed by Dr. R. J. Wilkinson, president of the West Virginia State Medical Association, as a member of the Fact Finding and Planning Committee to succeed Dr. Ben H. Swint, who resigned on account of illness. Dr. Grisinger has been serving as a member of the Association's Legislative Committee.

General News

P. & A. COMMITTEE MOVES TO CLARIFY STATUS OF DOCTORS

The action of the State Procurement and Assignment Committee in directing Dr. R. K. Buford, chairman, to notify the Central Office of the P. & A. Service, at Washington, that it is the unanimous opinion of the members that, with certain exceptions, no additional West Virginia doctors should be supplied for the armed forces until another quota is fixed for the state, amounts to a direct move to "freeze" doctors who remain in active practice on the home front.

The exception noted concerns doctors who have heretofore been declared available for military service and whose status remains the same, who have failed or declined to apply for a commission.

The chairman was directed to notify local P. & A. committees of the action taken by the state committee and to request that a revised list of doctors who have been and are still available for military service, and who have not applied for commissions, be submitted with the understanding that the names of the doctors appearing on such list would be passed along to the State Director of Selective Service for such action as may be deemed proper.

At the meeting, which was held at Charleston, September 2, the committee also moved to clarify the status of doctors who have been engaged in essential work who move to another community and engage in nonessential practice. The committee unanimously agreed that such doctors should be classified as available for military service.

In the report to Washington, the chairman was directed to call the attention of the Central Office to the fact that the action of the committee in "freezing" doctors in West Virginia was taken for the reason that the state has already supplied approximately fifty per cent more doctors than the quota fixed for 1942-43, and further because of the acute shortage of doctors in certain areas of the state. If and when another quota is assigned for West Virginia, then the committee will undertake to supply the number of doctors needed to fill the quota.

Besides Dr. R. K. Buford, chairman, the meeting was attended by Drs. R. J. Wilkinson, Huntington; Frank V. Langfitt, Clarksburg; Andrew E. Amick, Charleston; C. J. Reynolds, Bluefield;

D. A. MacGregor, Wheeling; Lt. Col. L. Rush Lambert, (MC), Charleston, and Mr. Charles Lively, secretary ex-officio. The meeting was also attended by Dr. R. O. Rogers, of Bluefield, and Drs. Raymond Sloan and Walter E. Vest, of Huntington.

SYMPOSIUM ON OBSTETRICS

Dr. Hudnall Ware, Jr., Professor of Obstetrics at the Medical College of Virginia will be the guest speaker in connection with the obstetrical symposium which will be held at the Daniel Boone Hotel, Charleston, October 12. At that time, Kanawha Medical Society will be host to the doctors of the Sixth Councillor District and to obstetricians from other sections of the state.

Dr. Ware will speak on the "Management of Breach Presentations" at the afternoon session, beginning at two o'clock. A roundtable discussion will follow. At the evening session, Dr. Ware will present a paper on "Ectopic Pregnancy." A moving picture on caudal anesthesia will be shown during the evening.

MERIT SYSTEM COUNCIL EXAMINATIONS

The following is a list of positions for which applications are now being accepted by the West Virginia Merit System Council:

Public Health Nurse (Class A)	$1680-1980
Public Health Nurse (Class B)	1500-1860
Public Health Nurse Trainee	1380-1500
Graduate Nurse	1380-1620
Chemist	1620-2100
Junior Bacteriologist	1920-2400
Junior Serologist	1920-2400
Technical Laboratory Assistant	1500-2100

Age limits and residence in West Virginia have been waived in the consideration of applicants for these positions. Appointments may be made at salaries above the minimum. Applications should be addressed to Merit System Council, 212 Atlas Building, Charleston, West Virginia.

NEWTON D. BAKER GENERAL HOSPITAL

The new Newton D. Baker General Hospital at Martinsburg will be dedicated probably sometime in October. This new 1700-bed institution is named for Newton D. Baker, former resident of Martinsburg, who served as Secretary of War under President Woodrow Wilson during World War I.

PHC EARMARKS PART OF TB FUND FOR SURGERY AND PNEUMOTHORAX

West Virginia moved a step closer to a full-time cancer control program when the Public Health Council, at a special meeting held at Charleston, September 9, authorized Dr. J. E. Offner, state health commissioner, to try to obtain from the United States Public Health Service the services of a doctor specially trained in cancer work. It was reported that over fifty doctors have completed the course at the National Cancer Institute at Bethesda, Maryland, and an effort will be made to have one of the graduates assigned to West Virginia for the purpose of setting up the new division of cancer control in the State Health Department.

The budget bill passed at the 1943 session of the legislature includes an item of $50,000 for each year of the biennium for this work, but due to the fact that so many doctors are engaged in essential war work, it has not yet been possible to get the state program under way.

The Council earmarked from the appropriation of $360,000 for the care of the needy tubercular the sum of $30,000 for surgery and out-patient pneumothorax. The remainder of the appropriation will be used for hospitalization of the indigent.

Although the legislature stipulated that the Public Health Council should have full control of funds appropriated for the treatment and care of the needy tubercular, the Department of Public Assistance will continue to make investigations for the purpose of determining the needs of patients. Regular DPA standards will not apply to TB cases because of the usual long term nature of the disease, and local health officers will therefore be called upon to make the final decision with reference to the hospitalization of patients. Cases of special public significance, early curables and sputum-positive cases of family contacts under twenty years of age will be given priority.

The State Health Department's bureau of tuberculosis will be charged with the administration of the fund of $30,000 set aside for surgery, but the remainder of the appropriation will be allotted to state sanatoria in proportion to their quota of indigent cases.

Christmas mail for the armed forces overseas should be mailed between September 15 and October 15 for Army personnel, and up to November 1 for the Navy.

IMPORTANT MEETING OF COUNCIL AND ASSOCIATION COMMITTEES

Although meetings of the Fact Finding and Planning Committee have had to be postponed twice on account of the illness of the chairman, Dr. Ray M. Bobbitt, of Huntington, action of the members has been anticipated to the extent that a special committee from the Woman's Auxiliary to the West Virginia State Medical Association has been set up by Mrs. John P. Helmick, president, for the purpose of conferring with the Association's committee in matters connected with the educational program planned for this fall and winter.

At a meeting of the Executive Board of the Auxiliary, held at Charleston, September 2, unanimous approval was given to the plan for the Auxiliary to sponsor an educational program designed to carry to the people at home the dangers that confront medicine as well as the public on the congressional front. The advisory board of the Auxiliary was in session at the same time, and plans for the campaign were agreed upon, subject to approval by the Planning Committee.

As this issue of THE JOURNAL goes to press, arrangements are being made for a meeting of the Fact Finding and Planning Committee at Huntington, September 29. The special committee from the Auxiliary has been called to meet at the same time. Final plans are to be agreed upon at this meeting for the part the Auxiliary is to take in the educational campaign.

The regular fall meeting of the Council is to be held at Morris Memorial Hospital, at Milton, the following day, according to a call issued by the chairman, Dr. R. O. Rogers, of Bluefield. The members are to be guests at a luncheon to be given by hospital officials. The business meeting is to follow, and it is expected that the Fact Finding and Planning Committee will be ready by that time to submit a partial report. The Council is also expected to select the site and fix the dates for the 77th annual meeting of the Association in 1944.

Notices have also been mailed concerning the first meeting of the special committee appointed by Dr. R. J. Wilkinson, president of the Association, on the revision of the constitution and by-laws. This meeting is to be held at the Prichard Hotel, Huntington, September 29. The committee is composed of Dr. J. Howard Anderson, of Hemphill, chairman, and Dr. James L. Wade, of Parkersburg, and Dr. F. C. Hodges, of Huntington.

LIMITS SALE OF ANTI-FREEZE PRODUCTS

The ban on the sale of anti-freeze preparations which contain ethylene glycol includes doctors and other business and professional men and women. Almost the entire output is needed for airplane motors, tanks, and other motorized equipment. Civilians will have to rely exclusively on alcohol or a product with an alcohol base. The ban is nationwide with the exception of some of the northwestern states and Alaska.

Government officials point out that if preparations drained from cars last spring are used this winter, a rust-repellant or "inhibitor", purchasable at most filling stations, should be used.

TWO WEST VIRGINIA NURSES KILLED

Two Army nurses from West Virginia met death recently while on duty overseas. Lieutenant Louise Link, of Richwood, was killed in action, probably in Sicily, and Lieutenant Martha Thurmond, Charleston, was killed in a jeep accident in North Africa. Lt. Link was a member of the McMillan Hospital graduating class of 1941, and afterwards served on the nursing staff at Charleston General Hospital. Lt. Thurmond was formerly on the nursing staff at St. Francis Hospital.

CONSULTANT IN NEUROLOGY

Dr. Tom A. Williams, formerly of Washington, D. C., is now located at 77 Kenilworth Road, Asheville, North Carolina, where he is psychiatrist to the Mental Hygiene Clinic and consulting physician in neurology and psychiatry.

DR. HINSDALE AT CHARLOTTESVILLE

Dr. Guy Hinsdale, formerly medical director at the Greenbrier Hotel (General Ashford Hospital), has moved from Ogunquit, Maine, to Charlottesville, Virginia.

VD EDUCATIONAL CONSULTANT NAMED

E. J. Hall, of Buckhannon, prominent West Virginia educator, has been named by Dr. J. E. Offner, State Health Commissioner, as educational consultant in Venereal Diseases in the State Health Department.

DR. BEN H. SWINT RECOVERING

Dr. Ben H. Swint, prominent surgeon of Charleston, who has been ill for several weeks, is now convalescing at his home and expects to be able to resume practice within the next few weeks.

County Society News

CABELL COUNTY

Dr. Walter H. Hamilton, Assistant Professor of Surgery at Ohio State University, College of Medicine, at Columbus, and proctologist at White Cross and Starling-Loving hospitals, was the guest speaker at the regular monthly meeting of the Cabell County Medical Society, held at the Hotel Prichard, Huntington, Thursday, September 9, 1943. His subject was, "Common Diseases of the Rectum and Colon."

COLE D. GENGE, M. D., *Secretary.*

KANAWHA MEDICAL SOCIETY

At the regular monthly meeting of Kanawha Medical Society, held Tuesday evening, September 14, at the Daniel Boone Hotel, Charleston, two army medical officers attached to the staff at Ashford General Hospital, White Sulphur Springs, were the guest speakers.

Major R. H. Kunstadter spoke on "War Malaria and its Significance in Civilian Practice." Major R. C. Pendergrass' subject was "Some Clinical Aspects of Virus Pneumonia." Dr. W. C. Stewart, of Charleston, led a roundtable discussion of the papers.

Dr. F. P. Eves, of Charleston, was elected to membership in the Society.

The importance of defeating the Wagner-Murray bill (S. 1161) amending the Social Security Act was discussed by Dr. George F. Grisinger and several other doctors, after which the members voted unanimously to direct the public relations committee of the society to notify the members of the senate committee considering the bill that the society is definitely opposed to its enactment. The committee was further instructed to make the position of the society known to the public generally by the use of statements given to the press.

GEO. P. HEFFNER, M. D., *Secretary.*

COMPLETES AVIATION MEDICAL COURSE

Capt. James H. Gray (MC), of Clendenin, was a member of the graduating class at exercises recently held at the School of Aviation Medicine, at Randolph Field, Texas, for members of the medical corps who completed the course for aviation medical examiners.

OCD PROVIDES AMBULANCE BODIES

The attention of visiting and attending hospital staffs is called by Dr. William S. Keller, Regional Medical Officer of the U. S. Office of Civilian Defense, to an unusual opportunity to relieve congestion of patients at hospitals.

Several hundred ambulance bodies provided by the U. S. Office of Civilian Defense are being made available to communities requesting them, according to Doctor Keller.

The chassis to hold the bodies must be supplied locally. The hospital trustees or board of governors will in many cases want to endorse purchase of the chassis when the matter is laid before them, Dr. Keller points out. Otherwise, fraternal, civic and other organizations, as well as grateful patients, may be more than glad to contribute the chassis. An attractive feature is that the OCD regulations permit the name of the donor to be painted on the chassis.

The securing of one or more of these ambulance bodies will enable hospitals to release patients more promptly. Since one of the important objectives of the OCD Emergency Medical Service, according to Dr. Keller, is to make available as many emergency beds as possible, requests for ambulances can be regarded as very real contributions to the war effort.

OCD officials point out that in times of large-scale disaster, such as the New York and Detroit race riots and the recent large railroad wrecks and fires, normal medical facilities are inadequate to take care of casualties. These ambulance bodies, providing for four stretchers each, are designed to meet such emergency conditions.

The design of the ambulance body has been approved by the Corps of Engineers of the Army. The body can be easily mounted on the chassis of 1939, 1940 or 1941 four-door model Fords, Chevrolets and Plymouths from which the rear part of the body behind the front seat has been removed.

The bodies have a number of unusual features, besides the space for four stretchers. Loading can be accomplished without climbing into the vehicles.

Hospital administrators and other medical practitioners interested in having these ambulance bodies made available for their use are urged to get in touch with Doctor Keller at the U. S. Office of Civilian Defense, Medical Science Building, Columbus, Ohio.

WITH DOCTORS IN THE SERVICE

Capt. Elbert Newton Dupuy, of Beckley, who was recently awarded the silver star for gallantry in action in the vicinity of Mateur, Tunisia, is now on duty in Sicily.

* * *

Lieut. (jg) W. R. Stevens (MC), USNR, of Kimball, is medical officer at the United States Naval Receiving Barracks at Savannah, Georgia.

* * *

Capt. James S. Klumpp (MC), USNR, of Huntington, who was one of the guest speakers at the 76th annual meeting of the West Virginia State Medical Association at Charleston last May, is now serving as executive officer at a Naval Base Hospital somewhere in the southwest Pacific. The following letter from him, dated July 29, was received the first of September:

"May I express gratitude for your very friendly note of May 20th. It was indeed a pleasure to see so many old friends and colleagues after an absence of two years. Even though your comments regarding the reception of my paper were but half true, one can only be humbly grateful for the opportunity to appear before his fellow physicians in such distinguished company.

"As to current news and information, you know that censorship keeps a firm grip on our pens and prevents any specific mention of location and the extent of professional activity. I am acting as executive officer of this hospital which serves as evacuation facility for a certain area of combat zone. We have ample facilities for giving excellent medical and surgical care of all types.

"The boys back home aren't so lucky. Of course they have the pleasure of paying a little more income tax, but I wouldn't swap the past two and a half years for ten years of private practice. It has been very difficult at times, but one does have the satisfaction of seeing a job well done under rugged conditions.

"The medical profession can well be proud of the physicians now serving in the armed forces. I have watched former professors and eminent clinicians dig ditches, mix concrete, install electric wiring, and erect tents and ward buildings under the worst possible conditions of weather and climate, and then do an excellent job of treating casualties in the hospitals they themselves built. Under actual combat conditions the profession has served with distinction, which has produced many very favorable comments from line officers and men.

"I know that all these medical officers like to receive letters, and if the boys back home would drop an occasional line to their friends scattered all over the globe, you can rest assured they will be appreciated. I have just received the June copy of THE JOURNAL, and will stretch its reading over a week. Thanks a lot for sending it to me."

* * *

Major Paul H. Revercomb, of Camp Sutton, N. C., came back to Charleston early in September for a visit for a few days with friends and relatives.

Dr. Harry Carney, of Charleston, who has been stationed in the Canal Zone for nearly two years, has been promoted from Captain to Major.

* * *

Captain Henry M. Escue, of Charleston, is in charge of the Department of Urology at the Station Hospital, Seymour Johnson Field, N. C.

* * *

Dr. John Lutz (MC), USNR, of Charleston, who has been serving as ship's surgeon on a tanker, has recently been promoted to the rank of Lieutenant Commander.

* * *

Dr. Kenneth M. McPherson, of Beckley, who is stationed at Fort Dix, N. J., has been promoted to the rank of Major.

* * *

Lieut. Wm. L. Claiborne, of Huntington, who has been stationed at Camp Pickett, Virginia, is now attached to the 269th Station Hospital, at Camp Ellis, Illinois.

* * *

"West Virginia physicians in military service have every right to be proud of their Association for continued membership and regular receipt of the JOURNAL without personal expense. Both Mrs. Hunter and I read the JOURNAL regularly and the President's Page seems almost like a personal letter." So writes Lt. Col. Wm. Byrd Hunter, of Huntington, who is assistant Commandant at the School for Medical Department Enlisted Technicians, Fitzsimons General Hospital, Denver. He states that Captain V. L. Peterson of Charleston is the only other West Virginia doctor in service at the hospital.

* * *

Dr. Gene M. Harsha, of Sistersville, has been promoted to the rank of Major. He is stationed at Fort Jackson, South Carolina.

* * *

Lt. Comdr. E. L. Gage, of Bluefield, writes this letter from Sicily:

"Received your letter of June 24 from the Association offices, and I for one appreciate your efforts to keep in touch with us. I received the JOURNAL in North Africa but not as yet here in Sicily.

"I traveled by motor vehicle over most of the north coast of Africa and have driven a good many miles here in Sicily. I would still prefer to be back in West Virginia.

"I noted with pleasure the election of Bob Reed as President of the society. I am sorry that I could not attend the annual meeting.

"We have a good hospital group here and are now quite comfortable in the home of a princess. We use the kitchen as an operating theater, which is much better than the tents in Africa. Best regards and good wishes for you and the society."

* * *

Dr. Robert M. Lamb, of Winona, who is connected with the Station Hospital at the Army Air Base, Daniel Field, Augusta, Georgia, has been promoted to the rank of Captain.

* * *

Lieut. William D. McClung (MC), USNR, of Richwood, who has been stationed in Alaska for the past year and a half, has been transferred to Pensacola, Florida, where he will attend the school of Aviation Medicine. He recently spent a few days leave visiting relatives in Charleston and Richwood.

* * *

Capt. H. J. Hancock, of Welch, is on duty somewhere overseas. He has been stationed at Fort Sam Houston, Texas, for the past several months.

* * *

Capt. Wm. P. Warden, of Charles Town, who has been on desert maneuvers in the west, writes that the temperature soared to 120-130 degrees in the shade, "after the shade had been provided. An interesting biliary tract syndrome developed in a great many cases where water was limited to one quart a day and about a quart at night," he writes. "With increased fluid intake to two gallons daily, the biliary tract syndrome rapidly cleared up." Captain Warden is now attached to the 121st Infantry Medical Detachment at Camp Forrest, Tennessee.

* * *

Lt. A. L. Batalion, of Ameagle, who sailed with the invasion troops for North Africa in January, 1943, and who was sent to the front February 1, was reported March 10 as missing in action. It developed, however, that he had been captured by the Germans, sent to Italy, and finally to a concentration camp in Germany, where he now reports he is attached to the camp hospital. Mrs. Batalion hears frequently from her husband. He writes that he has not received any mail since he was captured and that the Red Cross furnishes the prisoners' clothes and part of the food. In one of his letters (all of which are censored by German officials) he writes that the English and American officers attached to the hospital spend three hours each day in class and are taken for a two-hour walk outside the camp three times a week.

* * *

Dr. R. B. Nutter, Jr., of Lumberport, who has been stationed at Camp Forrest, Tennessee, has been promoted to the rank of Captain and is now on duty overseas.

* * *

Major Arnold Wilson, of Welch, who is with the armed forces overseas, writes that he is still receiving the JOURNAL. "The pages devoted to doctors in the service," he says, "is especially interesting to the doctors who are old friends and are now scattered all over the world. It is an excellent morale builder to read the scientific papers published by our friends who remain in West Virginia." By V-Mail, Major Wilson later reported that he had a nice setup in England, and that several West Virginia nurses are connected with his outfit.

* * *

Major Buford W. McNeer, of Hinton, who has been stationed in the south for several months, is now serving with the armed forces overseas.

* * *

"After fifteen months' service at Walter Reed General Hospital, Washington, I was ordered to the Middle East in April, 1942, and have been 'somewhere in the Middle East' since that time," writes Major Franklin H. Goodwin, of Welch. He is at present located in Libya.

"My work since coming abroad has been varied. I have served as station surgeon, executive officer to area surgeon, post surgeon, chief of the communicable diseases section of a general hospital, and am now in command of a unit of a field hospital, which is by far the most interesting work medically that I have had. It is a mobile unit, but we are set up to do practically any type of work, although at times, especially during sand storms, the going is a little rough, and I would not say that our life is exactly that of Riley, but we enjoy some of it and just take the rest.

"I think it rather amazing the relatively small amount of illness that we have among our troops in this part of the world. Our main problem has been dysentery, and this is for the most part, due to

lack of sanitation, not among our outfits, but among the natives."

* * *

Lt. Col. Bert Bradford, Jr., of Charleston, who had been taking special training at Mayo Clinic, has returned to his post at Camp Gordon, Georgia, where he is attached to the 45th Evacuation Hospital.

* * *

Lieut. Comdr. Marvin H. Porterfield, of Martinsburg, who has been serving with the United States Navy in New Caledonia, has returned to the United States and is now attached to the Port Dispensary at Quantico, Virginia.

* * *

Lt. Comdr. Wm. A. Thornhill, Jr., upon a recent visit in Charleston, reported that he would be stationed in this country for some time. He had just returned from Brazil where he served with the Navy Medical Corps for nearly two years.

* * *

From somewhere in the southwest Pacific, comes an air mail letter from Captain Norman Friedman, of Longacre. The letter was dated September 3, postmarked September 11, and received September 20. As will be observed from his letter, much time is saved in the delivery of letters to his sector if sent by air mail. The letter follows:

"I received your letter of June 24th a couple of days ago. I have received THE JOURNAL regularly, although rather late, and had intended for some time to write you, giving my new address and some information concerning my service overseas. However, for the last two months I have been on combat duty and fighting the Japs took up all of my time.

"I left the States in May, 1942. Since then I have been in New Zealand, the Fiji Islands, and Guadalcanal, where we first started the great adventure. At present, our whereabouts is a military secret. As a battalion surgeon of an infantry unit, our medical service—especially in jungle fighting—was of necessity front line work. We were never more than 30-50 yards behind the advance units. And, there are many tales to tell.

"Of one thing I am proud. The entire division is unanimous in their praise of all echelons of the Medical Corps. And my medical section was commended and cited for its work in the scrap just finished. I'll try to write whenever I can. Meanwhile, accept my best wishes and let me express the hope that I may hear from you soon again."

PUBLIC HEALTH COUNCIL TO MEET

The regular fall meeting of the Public Health Council of West Virginia will be held at Charleston, October 25-27, for the purpose of examining applicants for license to practice medicine in West Virginia.

Doctors in the War

DR. R. R. TROTTER COMMISSIONED

Dr. Robert Russell Trotter, of Morgantown, who graduated from Temple University in 1942, and who has been interning in Pennsylvania Hospital, Philadelphia, has been commissioned a first lieutenant in the Army and has been assigned to duty at Carlisle Barracks, Pennsylvania.

ACCIDENTS TAKE HEAVY TOLL

Accidents kill more males between the ages of 3 and 38 than any other single cause. They kill nearly three times as many persons of both sexes between the ages of 10 and 14 as does the next most important cause of death, namely, heart disease. And if one realizes that for every person killed, 50 are permanently disabled (this figure varies in different age groups) and about 200 are temporarily disabled and hence need medical care, it is obvious that in terms both of prevention and of treatment this problem bulks large in the responsibility of the physician.

Four million workers were killed or seriously injured as a result of accident during 1941, according to the latest report by the National Safety Council. If one thinks of the years of effort normally involved in building up an army of 4,000,000 men, one gets some appreciation of the significance of this figure. Furthermore, in terms of industrial warfare the National Safety Council estimates that these accidents resulted in a loss of four hundred and sixty million man days, enough labor to have produced during 1941 twenty more battleships, one hundred more destroyers, nine thousand more bombers and forty thousand more tanks. This would roughly have doubled the number of these instruments of war at the disposal of the United States when war was declared on Dec. 8, 1941.—Flanders Dunbar, M. D., in War Medicine.

TB DEATH RATE HIGHER IN WOMEN

About 65% more young women than men die of tuberculosis between the ages of 15 and 25. From a practical standpoint the employer of large numbers of women needs an effective medical department if he would avoid a tuberculosis problem. —Symposium on Tuberculosis in Industry, N.T.A. 1941.

TREATMENT BETTER THAN PROPHYLAXIS

"In general, the policy of treating men for malaria only after they become infected is better than prophylactic treatment if adequate laboratory facilities are available," Lieutenant Commander David R. Talbot (MC), U.S.N.R., declares in *The Journal of the American Medical Association* for September 25 in a discussion of new aspects of malaria. "Certainly this rule," he continues, "holds in peacetime or at any base where military urgency does not require that a maximum number of men be kept in the field to fight. However, in an area of active combat, especially where malaria is caused by P. falciparum is endemic, prophylactic antimalarial measures must be adopted."

This agrees with Circular Letter No. 153 from the Office of the Surgeon General of the Army concerning the drug treatment of malaria, which is reprinted in the same issue of *The Journal.* The letter advises that drug suppressive treatment is an emergency procedure.

Dr. Talbot says that prophylactic treatment may mask symptoms while the disease is insidiously doing damage to the infected man's blood forming organs, so that when the malarial infection does break out the body's natural defensive mechanisms are so impaired that a more serious type of disease than usual results.

In the introduction to his article Dr. Talbot explains that "On the return of millions of service men from tropical duty to civilian life at the end of the war it is going to become necessary for every physician to have a working knowledge of malaria and other tropical diseases. This knowledge must include certain new aspects of the nature of malaria and its treatment that have been brought out during this war. The fact that large groups of men have been under military control while being treated for malaria has made it possible to study this disease in an unusual way, by means of routine blood examinations, hospitalization and a more thorough follow-up of patients than would be possible in civilian life. * * *"

The basis of his paper is material obtained while he was doing duty as a senior medical officer at an outlying military base where he had an opportunity to observe the results from two similar groups of men under identical conditions of exposure to malarial infection who were handled according to two different accepted methods of malaria control. The one, the Army group, took atabrine (0.15 Gm. twice daily) prophylactically on two days of each week, while the second, the Navy group, were being given treatment only as they showed symptoms or had blood smears positive for malaria. It was observed that while in the Army group the incidence of malaria had been quite low under a regimen of prophylactic treatment with atabrine, when the infection did occur in the Army it was much more severe and was slower to respond to treatment than the infection in the group that had not been receiving antimalarial prophylaxis.

Among the other recommendations made by Dr. Talbot are that in areas where malaria is common it should be a monthly routine to examine thick smears of blood from all military personnel. All persons with smears containing malarial parasites, even those without symptoms, should be treated.

Treatment of malaria with both quinine and atabrine, when both are available, is more effective in preventing recurrences than prolonged treatment with one of them. Because of some individual idiosyncrasy, an occasional person will be found whose malarial infection does not respond to atabrine or, again, to quinine. In such cases the treatment will then have to be given with the single effective drug.

Of particular importance is his statement that "Malaria, like syphilis, may simulate different diseases of every part of the body, and the absence of chills and fever should not rule out its occurrence in people who are living or have sometime in the past lived in the tropics or other areas of endemic malaria."

SAFETY IN BATHTUBS

"We take pride in our millions of bathtubs, yet there is much that can be done to render them safe" Guy Hinsdale, M.D., Charlottesville, Va., declares in *Hygeia, The Health Magazine* for October. "Architects and designers of tubs and fixtures must recognize the dangers and provide foolproof safeguards before bathtub accidents can be eliminated entirely.

"Danger lies in the installation of the tub and electric light fixtures," he points out. "Architects should be aware of this danger and never allow the electric fixtures or even the switches or buttons to be within reach of the bather. When the bather is in the tub or standing on a wet floor, it is possible for him to receive a fatal shock if he touches a broken or frayed electric wire, most certainly if he tries to use a massage machine. * * *."

(Ed: Dr. Hinsdale was formerly medical director at The Greenbrier Hotel, White Sulphur Springs.)

FREE (?) MEDICAL SERVICE

It is high time for all doctors to wake up and become interested in what is giong on in Washington concerning medicine. How many of us understand just what effect Senate Bill 1161 will have upon the practice of medicine in the event it becomes law? The private practice of medicine will be a thing of the past the moment this bill becomes effective. Medicine will be completely under political control, and the worst part of the matter is it will be under the control of one man * * * the surgeon general of the Public Health Service.

This bill provides that considerably more than three billion dollars shall be put at the disposal of this man. In addition, it provides that all medical colleges shall be "taken over" and run by this one man and his appointed council. It also provides that every medical student shall be subsidized to the amount of seven hundred dollars per year. It also provides that this one man shall determine just how many patients each doctor, who bends the knee to him, shall be allowed to treat.

It is estimated that about 110,000,000 Americans will be entitled to free medicine and free hospitalization (such as it will be) under the provisions of this bill. The other thirty million have the privilege of looking after their own health by selecting and paying their own doctor. I wonder how many doctors will be able and willing to restrict their work to these thirty million free Americans? * * *

Now is the time for doctors to get busy and assert themselves, or they may, forever, hold their peace and lie supinely upon their backs.—G. S. B. in The Mississippi Doctor.

POLITICAL MEDICINE

It would be unwise to underestimate the powerful forces arraigned behind the Wagner-Murray-Dingell Bill (S. 1161), as the lengthy report of the National Resources Planning Board indicates. It is introduced at a time when the vicissitudes of war, sparing neither man nor the proudest of his works, are burying empires and cities in a common grave; when doctors by the thousands and the tens of thousands are in the armed forces, unable to express their opinion of it; when labor is at the carefree peak of its earning capacity; when so many billions are being spent that the addition of $3,048,000,000 yearly for political medicine and the support of its inevitable bureaucracy seems a mere drop in the bucket.—New York State Journal of Medicine.

HEALTH SERVICES FOR SCHOOL CHILDREN

There is another aspect of the educational influence of the health services. We have finally found that there is no use opening the doors of American schools and then crying out that we are offering free education to all on the same terms, if many of our children come to these schools so ill-fed, so ill-housed and so ill-cared for that they are unable to profit from the instruction which is given to them. Equality of opportunity means equal opportunity to live up to what you have. This equality of opportunity is denied to many school children.

There is definitely a difference of function between the health services and those of other agencies. When children who are attending our schools require better food, when they require adequate clothing, and when they require medical or surgical attention, it is proper for the schools to recognize that such services are the primary function of other agencies. It is essential that every means be brought to bear to see that these children receive attention from appropriate sources. That is the way of democracy. Realism demands that the children be given their chance no matter what agency may be primarily responsible for it.—John L. Bracken, Supt. of Schools, Clayton, Mo., in Jour. School Health, Nov. 1942.

DR. ABELL SUCCEEDS DR. McCORMACK

Dr. Irvin Abell, Louisville, has been appointed a member of the Board of Trustees of the Southern Medical Association to fill the unexpired term of Dr. Arthur T. McCormack, Louisville, deceased, the appointment having been recently announced by the President, Dr. Harvey F. Garrison, Jackson, Mississippi. The Trustees are past presidents. The president when retiring from that office is elected to the Board of Trustees where he serves for six years. Dr. Abell was President of the Southern Medical Association 1932-1933 and a member of its Board of Trustees 1933-1939.—Southern Medical Journal.

LIGHT DIET

"What did you have for breakfast?" asked the attendant, who had to determine if the prospective donor of blood would be acceptable.

"Ah, that's all jake. The Doc told me what not to eat, so I just had a cup of coffee and a piece of dry toast—no cream in the coffee and no butter on the bread—a beer and a couple of shots of good whiskey."—Southern Medicine and Surgery.

use for the manufacture of any known therapeutic agent. The hope of the future for the large scale economical manufacture of this important drug lies in the solution of the pure chemistry which alone would lead to the chemical synthesis of the substance. It is in the hope of achieving this end that the Upjohn penicillin fellowship at the University of Illinois has been established.

SULFAMERAZINE

Sulfamerazine, a new compound that simplifies dosage and lowers costs in sulfonamide therapy, is now available for general use in the treatment of infections due to hemolytic streptococci, meningococci, pneumococci and gonococci. Developed at the Medical-Research Laboratories of Sharp & Dohme, sulfamerazine has been subjected to extensive pharmacologic investigation and was studied clinically in the treatment of about 2,000 patients prior to its release.

The chemical name for sulfamerazine is 2-sulfanilamido-4-methylpyrimidine, or monomethylsulfadiazine. In comparison to sulfadiazine and sulfathiazole, sulfamerazine is more rapidly and completely absorbed from the gastrointestinal tract and more slowly eliminated by the kidneys. Thus, therapeutic concentrations in the blood and tissues are produced and maintained by smaller or less frequent doses of sulfamerazine as compared to other sulfonamide compounds. This characteristic is an important advantage in the treatment of critically-ill patients who must be disturbed as little as possible.

Sulfamerazine has been referred to as the most outstanding advance in sulfonamide therapy since the introduction of sulfanilamide. Historically, sulfapyridine followed sulfanilamide but, although possessing the added advantage of being more effective in the treatment of pneumonia, it has a relatively high toxicity. Sulfathiazole and sulfadiazine, introduced later, proved less toxic. Sulfamerazine, with toxicity not exceeding sulfadiazine and more efficient therapeutically on a dosage basis, possesses three outstanding additional qualities: First, more rapid absorption following oral administration,

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thereby minimizing the need of intravenous therapy; second, more complete absorption, resulting in higher blood levels; and, third, longer retention, resulting in reduction of the total dosage or, what is more important, prolongation of the time interval between doses.

NEW ANTIMALARIAL

A new $75,000 building to be devoted exclusively to the production of plasmochin, an antimalarial, is being constructed by the Winthrop Chemical Company at Rensselaer, New York.

Plasmochin is used in combination with atabrine in combating malaria and is used by the armed forces of the United Nations. Successful use of this synthetic drug by Army and Navy medical officers has encouraged the company to enlarge its plant facilities.

Winthrop's development of atabrine, using all American materials, was hailed as an outstanding medical achievement and contributed to the presentation of the Army and Navy "E" award for production last December.

TUBERCULOSIS ABSTRACTS

(Continued from page 351)

nity. Unfortunately, sanatorium records show that the proportion of far-advanced cases admitted for the first time has not yet declined, nor has the proportion of minimal cases risen, in spite of the wider use of x-ray. Surveys cannot reach everyone; the public must be educated to consult a physician earlier, and the physician must be on the alert.

New case-finding methods have initiated a large scale attack on unsuspected tuberculosis among apparently healthy people.

Roentgenographic Surveys for Tuberculosis in Massachusetts and Their Importance to the Physician, Philip E. Sartwell, M.D., New England Journal of Medicine, June 3, 1943.

OUR RESPONSIBILITY

The medical profession is back of the national government without reservation in our war effort. The 45,000 medical men now in the armed forces are proof of this assertion. The profession, however, is just as wholeheartedly opposed to the tendency and threats in Washington to eliminate private industry and freedom of initiative in our country. This is evident from the editorials which

THE WEST VIRGINIA MEDICAL JOURNAL

ATLAS BUILDING, CHARLESTON, W. VA.

The Committee on Publication is not responsible for the authenticity of opinion or statements made by authors or in communications submitted to this Journal for publication. The author or communicant shall be held entirely responsible.

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955 Fourth Ave.
Huntington, W. Va.

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Business Manager
Atlas Building
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ENTERED AS SECOND-CLASS MATTER, JANUARY 1, 1926, AT THE POST OFFICE AT CHARLESTON, WEST VIRGINIA

Vol. XXXIX November, 1943 No. 11

NEUROSURGICAL PROCEDURES FOR THE RELIEF OF PAIN*

By CLAUDE C. COLEMAN, M. D.
Richmond, Virginia

THE purpose of this presentation is to discuss neurosurgical procedures for certain conditions in which pain is the only indication for operation. Operative treatment of surgical neuralgias, so successful in relieving the disease, may be contrasted in this discussion with that directed toward relieving suffering of patients with incurable malignancy. Patients with malignancy, though hopeless insofar as cure of the malignancy is concerned, should not be denied operative procedures for mitigation of the intense suffering so common when malignancy involves the cranial or spinal nerves.

Operation solely for the relief of pain should be used with discrimination for experience has shown that all painful conditions in the exclusive domain of even one nerve, such as the trigeminal, are not equally benefitted by dividing the nerve. In fact, some are made worse. It should be stated that in the absence of demonstrable pathology, the cutting of nerves for the relief of pain has a limited application, though highly useful as illustrated by surgical treatment of tic douloureux. An understanding of the mechanisms for the mediation of pain is necessary for a successful application of operative procedures in conditions of intractable pain.

THE AUTHOR

Dr. Coleman, graduate Medical College of Virginia; postgraduate Polyclinic Hospital, New York; Professor of Neurological Surgery, Medical College of Virginia; American Neurological Association; Society of Neurological Surgeons; Fellow American College of Surgeons; Southern Surgical Society; Honorary member Harvey Cushing Society; Ex-President, Society of Neurological Surgeons.

Painful conditions in which neurosurgical procedures are helpful may be classified in three groups as follows:

1. Incurable malignancy which has spread to sensory nerves causing intractable pain. The sole indication for operation is the relief of suffering.

2. Mechanical compression of spinal nerves of the extremities.

*The Oration on Surgery, delivered before the seventy-sixth annual meeting, West Virginia State Medical Association, Charleston, May 18, 1943.

3. Paroxysmal neuralgias of the cranial nerves.

In the first two groups the causes of pain are known, and in the first group this cause cannot be removed, while in the second the condition producing the pain can be eradicated. In the third group the pathology of facial neuralgia is unknown and pain is the only disability. There are two types, paroxysmal and continuous. Nerve section will cure the paroxysmal type of neuralgia, but may make the continuous atypical type worse.

We have excluded from consideration in this paper other conditions forming a heterogeneous group of which pain is the outstanding feature. Many of these conditions are characterized by painful vasospasm and relieved by measures which paralyze the appropriate sympathetic mechanism. Among these may be mentioned angina pectoris, peripheral vascular disease, painful traumatic osteoporosis and causalgia. It seems best however, to confine this discussion to a consideration of those lesions in which section of either cranial or spinal nerves or pain tracts of the spinal cord will bring about relief of pain.

PATIENT SHOULD BE INFORMED

Group 1.—Intractable pain of hopeless malignancy arouses the sympathy of all physicians. The surgical treatment of nerve pain in such cases presents discouraging aspects as the malignant condition is inevitably fatal. This however, should not cause the treatment for relief of such intolerable suffering to be withheld from the patient. Addiction to morphine is to be expected in such patients unless the pain can be relieved by other measures. Unfortunately, too many such patients are not told they have a malignant disease so that when the pain is relieved by section of the pain tracts of the cord and the malignancy steadily progresses, involving as it usually does, motor nerves with subsequent paralyses, the patient, if unaware of the serious nature of this condition may feel grateful for relief of suffering but become discouraged and embittered because of increasing helplessness. Unless the patient knows he has a malignant condition, no matter how carefully it is explained to him that the operation to stop his pain will in no way affect his disease, the relief of pain in itself, however complete, may be far from satisfactory to the patient. The resulting situation is often very embarrassing to the surgeon and in my opinion there should be only rare cases in which the patient is not fully informed of the true nature of his condition before pain relieving operation on the spinal cord or spinal nerves is performed.

USE OF MORPHINE

It is a matter of common observation that morphine gives only partial relief of nerve pain resulting from malignancy but the measure of relief it affords and its quieting effect upon the nervous system, easily lead to fixed addiction to the drug. We have found such cases unsatisfactory for operation for relief of pain as it is difficult to determine afterwards how much of the patient's complaint is due to actual pain and how much is the residuum of morphine addiction. We believe that operation solely for the relief of pain of incurable malignancy is contraindicated in patients who have become dependent on opium.

When unexplained pain follows operation for malignancy, such as that of the breast, uterus or prostate, regardless of the completeness of local removal of the lesion, the assumption that the pain is caused by malignancy is justifiable until proved to be erroneous. Many patients with severe pain due to malignancy are in good general condition and operation to stop the pain should be done before morale is exhausted, or the patient has become addicted to drugs, or the physical condition too depleted to permit surgical treatment. If the pain is believed to be due to malignancy one can expect only its increasing severity. The best results, therefore, are obtained by surgery in the early stages of malignant metastases.

In 1912, Spiller of Philadelphia, who contributed so much to American neurology, suggested to Edward Martin that the pain of

malignancy in the lower extremities and lower part of the body might be relieved by precise section of the spinothalamic tract of the cord. This suggestion was based on careful histologic studies of the spinal cord. The operation was carried out with success by Martin and was designated as "cordotomy." Frazier later popularized the operation. The procedure abolishes the senses of pain and temperature from a point about four to six segments below the level of section of the pain tracts. It does not disturb motor power in the extremities nor does it abolish the sense of touch. Bladder function following bilateral cordotomy may be disturbed for a short time after operation. In most cases, even those in which the nerve roots of only one side are involved in the pain, it has seemed advisable to do the bilateral operation since extension of the malignant process to the opposite side is usually a matter of a short time.

This operation has not been so successful in the relief of nerve pain due to malignancy about the brachial plexus. The procedure finds its chief usefulness when the pain is located in the lower abdomen, pelvis and lower extremities. In some cases, particularly those with intractable pain from carcinoma of the large bowel, the primary relief may be complete and yet later on, due perhaps to involvement of the sympathetics, a different type of pain may develop. In such instances, however, the patient's general condition has progressed to a very desperate state, and one which precludes further surgery.

COMPRESSION OF SPINAL NERVE ROOTS

Group 2.—Chronic pain from compression of the spinal nerve roots comprises the largest group of cases in neurosurgical clinics. The evolution of knowledge and treatment in this group of cases forms one of the most interesting chapters in modern medicine. Just as a better knowledge of abdominal surgery in the early part of the twentieth century eradicated such terms as gastralgia, etc., so have the terms brachial neuritis, lumbago, and sciatica given way to medical terms based upon a better knowledge of the underlying pathology. In all these conditions the disturbance formerly has been attributed too frequently to arthritis of the spine, discovered by x-ray examination.

There are two painful lesions affecting the upper extremities which within the past decade have received intensive study. One of these is compression of the brachial plexus and subclavian artery in the angle formed by the attachment of the anterior scalene muscle to the first rib. This is not necessarily a pathological condition although it may produce pathological results. The condition is probably due to disturbance of normal relationship between the trunks of the brachial plexus and the first rib over which they must pass to their distribution in the upper extremity. Should the brachial plexus be compressed by the scalene tendon as it passes over the rib, a traumatic neuritis may result, causing pain about the shoulder girdle with radiation into the arm. It has been known for many years that the building up of the thoracic cage by an extra rib produces this syndrome, but it had not been appreciated that even when a cervical rib was not present, compression of the nerve roots by the overlying scalene tendon might cause similar symptoms. Adson grasped the importance of scalene tendon compression in cervical rib cases when he advocated division of the tendon without removing the extra rib for the relief of pain and circulatory disturbance in cervical rib cases. This amounted to a decompression of the brachial plexus. It was but a short step from the section of the scalene tendon by Adson in cervical rib cases to the recognition by Naffziger of the effects of scalene tendon compression of the brachial plexus without cervical rib. Extensive studies of neurocirculatory disturbances by compression of the scalene tendon have been made by Ochsner and others. Many cases of pain in the upper anterior chest and posterior part of the shoulder with radiation into the arm and hand, formerly thought to be due to cervical arthritis and neuritis, have been relieved by division of the scalene tendon.

The diagnosis of compression of the brachial plexus by the scalene tendon rests upon pain previously described with a point of tenderness over the scalene tendon and reproduction of typical pain radiation into the arm by pressure over this point.

The operation is one of negligible risk and little penalty. A transverse supraclavicular incision 2½ inches long is made directly over the tendon, under local anesthesia. The anterior scalene tendon is exposed after displacing the phrenic nerve medially and the tendon is divided.

Vascular disturbance of the arm and hand is not infrequently associated with the pain incident to scalene compression although this is much more common when a cervical rib is present.

COMPRESSION OF ROOTS OF BRACHIAL PLEXUS

Pain very similar in character and distribution to that of the scalenus anticus syndrome may be due to compression of one of the roots of the brachial plexus by lateral herniation of the nucleus pulposus of the cervical spine. These herniations will produce pain in the scapular region with radiation down the arm and into the hand. Objective findings are rare except for point tenderness over the site of the ruptured nucleus. The point pain is intensified by coughing, sneezing, straining and certain motions of the head but even without such aggravation the pain is extremely severe and persistent. There may be radiation anteriorly so that angina is sometimes suspected. These lesions undoubtedly have been often overlooked in the past, and now that attention has been called to them, a rapid increase in the number of recognized cases may be expected. It is, perhaps, true that many cases diagnosed as scalenus anticus syndrome, and not relieved by section of the tendon, were actually cases of herniation of a cervical disc. The association of vascular disturbance with the history and findings as above described, would be indicative of scalenus anticus compression.

Patients complaining of low back pain and sciatica due to intervertebral disc lesions constitute the largest group of neurosurgical cases at the present time. The treatment of this condition until the past ten years was very unsatisfactory because of failure to recognize the underlying pathology. Among the causative factors to which low back pain and sciatica were formerly attributed were hypertrophic arthritis, sacro-iliac strain, contraction of fascial bands, auto-intoxication and focal infection. Except in a few cases of cauda equina tumor, no pathology was found at operation to account for the patient's complaints. Through the combined efforts of the roentgenologist, orthopedist and neurological surgeon, new concepts have been established to explain low back pain with sciatica radiation. With correct diagnosis, the lesion responsible for the pain may be exposed and removed in every case. We do not mean to infer that all low back pain, even with sciatic radiation, is due to herniation of an intervertebral disc, but we do believe that most cases of low back pain and sciatica are due to intervertebral disc lesions of the lower lumbar spine.

LABORATORY STUDIES

In the evolution of the diagnosis of this condition, and before the symptoms in all details were completely recognized, it was necessary to employ laboratory studies of the spinal fluid and injection of lipiodol in the spinal subarachnoid space for diagnostic confirmation. Increasing experience with these lesions has made diagnosis possible on clinical study alone in most instances, with injection of lipiodol in only the atypical cases. Ruptured nucleus pulposus occurs at the fourth and fifth interspaces in about 95 per cent of cases. The extruding nucleus passes posterolaterally for well-known anatomical reasons. Only occasionally will the herniation protrude in the midline. A posterolateral rupture brings the extruded contents of the disc in contact with the lower lumbar and upper sacral nerves which are part of the sciatic plexus. The extruded nucleus is therefore is an ideal position to cause sciatica. If a rupture occurs at the fifth lumbar interspace,

the first sacral nerve is involved; at the fourth lumbar interspace the fifth lumbar nerve receives the greatest pressure from the extrusion. A knowledge of the anatomy and distribution of these nerve roots in the leg and foot will usually enable a differentiation between an extrusion at the fourth or fifth interspace, although in a small percentage of cases, perhaps 5 to 10%, there may be herniation at both levels.

A history of trauma is present in a considerable percentage of cases, but in many there is no recollection of injury. The patient often attributes the beginning of low back pain to some particular act or injury such as lifting a heavy weight, falling upon the buttocks, swinging a golf club or slipping and falling in a twisted position. Two cases in our experience dated the onset of the condition to sneezing while in a stooped position. The pain may develop simultaneously in the lower back and sciatic distribution, but more frequently low back pain precedes the sciatica. Coughing, sneezing and straining may cause intense pain and often these patients will brace themselves to lessen the effects of coughing and sneezing.

LOW BACK PAIN AND SCIATICA

Low back pain and sciatica resulting from intervertebral disc lesions come in attacks and there may be remissions in which the patient is very comfortable. We believe that remissions are characteristic of such lesions, but each attack has a tendency to grow progressively worse so that the patient may become entirely disabled. Continuous back pain over long periods without intermissions is highly suggestive of a neurosis or a postural defect. In ruptured nucleus cases the patient may become aware of disturbed sensation in the foot with tingling and numbness on the outer or inner side of the foot. In large ruptures both sciatic nerves may be involved but in most cases the pain and disability are restricted to one side. Usually there is little motor disturbance so that the patient's disability is the result of pain alone.

In the examination of these patients one must be content with few objective findings. The type of lesion is such that gross findings are improbable. Flexion of the thigh with the leg in extension is very painful on the involved side when the patient is in an attack. With added forcible dorsiflexion of the foot the pain is intensified along the sciatic nerve and lower back. The ankle jerk may be absent in fifth interspace lesions. There is often objective hypesthesia of the lateral surface of the foot. Objective finding which we consider of great importance is the production of pain in the back and involved leg by forcible flexion of the neck and most important of all exquisite tenderness with radiation of pain when deep pressure is made over the involved interspace.

INTRACTABLE PAIN OF THE FACE

Group 3.—Chronic intractable pain of the face comprises a large group of cases under consideration. This group includes chronic painful lesions amenable to surgery as well as others in which surgical treatment has proved to be disappointing and no type of treatment has been successful.

The efficacy of surgery is definitely related to the distribution of the pain in an anatomical pattern. Those cases in which chronic facial pain does not conform to the distribution of the sensory nerves of the face have been a subject of much study but with little success in determining either the etiology of the pain or in finding measures for its relief.

Paroxysmal attacks of pain are typical of that group of cases in which proper surgical treatment cures the patient. Paroxysmal disturbance of function is characteristic of all surgical diseases of the cranial nerves. This is typically exemplified by tic douloureux of the fifth and ninth nerves and Meniere's disease, a disturbance of the eighth cranial nerve.

Tic douloureux of the fifth nerve is a condition frequently seen. It has been described in great detail by many writers, but there remains some confusion among the profession in general as to the diagnosis and treatment of this condition. There is no medical treatment which gives relief of this painful condition. Unfortunately, patients may persuade

their dentists to extract all their teeth, always without benefit, or they may prevail on the rhinologist to perform operations on the accessory nasal sinuses with the hope of obtaining relief from the agonizing pain. The result is always disappointing. The disease is a common one as attested by nearly one thousand cases that have come for relief in my clinic since its organization. The diagnosis of tic douloureux of the fifth nerve is made almost entirely on the patient's statements, but it may be necessary to bring out the facts of the history by proper questioning.

CAUSE OF TIC DOULOUREUX

The cause and pathology of tic douloureux are unknown. It is believed to be due to some disturbance of the Gasserian ganglion. It is not due to focal infection. Certainly after the disease develops it is not affected in any way by the eradication of focal infection, should such be present. The disease usually occurs in patients of later life and they finally reach a neurosurgical clinic in many cases after years of suffering. Patients with this very excruciating pain have frequently been discouraged from seeking operative relief by gloomy and erroneous statements. They have been told that facial paralysis will inevitably result from operation and that the loss of the eye on the operated side is a penalty which must be paid for relief of pain. In my early experience with this condition, I frequently saw patients who not only stated they were willing to be paralyzed and lose the eye, but would also welcome death on the operating table if cure could not be brought about.

The major operation for permanent cure carries practically no mortality, even in the most advanced age. In nearly 600 cases of the major operation for permanent cure of tic douloureux in my clinic there has not been a single hospital death from any cause following operation; nor have we heard of any patient who died within three months after discharge from the hospital. When one recalls that most of these patients are old people, the oldest in our series being 87 years of age, and the large per cent over 50, one cannot escape feeling that an element of luck must have entered into the statistics. The time spent for surgical treatment of nearly 600 patients might well give some mortality as an incidence of mere hospitalization. In other words, 586 patients residing in the hospital while undergoing treatment for an average of ten days each would aggregate sixteen years for the entire group. During sixteen years a death now and then from merely living in a hospital would not be surprising among a group of patients of this age.

It has been interesting to study the psychology of patients with tic douloureux, but discussion of this must be reserved for another occasion. It has seemed to me that patients with tic douloureux have, on the average, an unusually long life expectancy. The disease seems to reserve its victims for its own vengeance. In spite of the loss of morale from repeated attacks and the ever present dread of future attacks, patients with tic douloureux do not become drug addicts, nor have I heard of a single suicide among such patients. They may, indeed, become greatly depressed and discouraged after years of suffering, but in the remissions of the disease, courage returns and the patient indulges the fond hope that, perhaps, after all, the pain has permanently disappeared.

DIAGNOSIS

As to diagnosis, the points to emphasize are the paroxysmal characteristics of the unilateral pain, its typical pattern, confined to one or more branches of the fifth nerve and most important of all, the production of the painful paroxysm by some peripheral stimulus to the branch or branches involved. If the patient has tic douloureux of the first division, the pain may bet set off by stimulation about the eyebrow. The first or ophthalmic division is involved primarily in only a small percentage of cases, perhaps 2 to 3 per cent, but the pain may start in the second and overflow to the first or third.

When the second division is affected, a light touch on the side of the nose or upper lip or shaving brings on paroxysms of pain,

while the lower lip near the angle of the mouth is the sensitive zone in the third division. These are the usual "trigger zones" but there may be others in any part of the peripheral field of the mouth or face supplied by the branch or branches of the nerve involved. When the third division is involved, paroxysmal pain may be initiated by chewing, talking, or shaving the lower lip.

The same terms are frequently used by patients in describing the terrific pain of tic douloureux. Such expressions as "electric shock", "sprangling", "burning with a red hot wire", are common. One patient recently used the term "blitz" in describing the suddenness of the attack. Patients with tic douloureux involving the second and third branches of the nerve usually refrain from conversation, realizing as they do that any movement of the facial muscles may precipitate a paroxysm of pain. The face on the affected side is often held rigidly and the opposite side of the mouth used to enunciate words. Some patients carry a pad and pencil with which they may carry on the interview.

FREQUENCY OF ATTACKS

As a rule, the paroxysms of pain are not as frequent at night due to the fact that the patient is not as likely to set off the pain by movements of the muscles of the face. Attacks of pain sometimes follow seasons of the year; for instance, the patient may be in what is described as an attack during the spring, while it clears up during the summer only to recur in the fall. During the free interval the pain is not set off by any peripheral stimuli. During a severe attack, patients with third division pain may become emaciated and dehydrated from lack of nourishment brought about by their inability to eat or drink for fear of bringing on the pain. In some cases, after admission to the hospital, we have fed these patients through a nasal catheter while preparations for operation were made.

All forms of nervous tension increase the frequency of the paroxysms. Therefore, the best medical therapy, while far from successful, is some form of sedative such as nembutal, which has no pain relieving qualities, but depresses the general nervous activity, and, in this manner, decreases the number of paroxysms.

Little has been written on the surgical treatment of tic douloureux in recent years. This may be due to the fact that the treatment now has been brought to a very high state of effectiveness. Treatment of tic douloureux is based on the theory that the paroxysms of pain may be prevented if the peripheral branches of the nerve are disconnected from their central origin. This may be done in two ways. Injection of 95 per cent alcohol either into the ganglion or one of its peripheral branches at the point where it leaves the skull, will cause a physiological interruption of the branch or nerve which not only disconnects it from the perception centers for pain but also produces numbness in the distribution of the nerve injected. Deep alcohol injection is the simplest treatment for tic douloureux. It is not always easy, however, to make a direct hit of the nerve at the base of the skull. If the nerve is properly injected, immediate numbness is produced, and the pain is entirely relieved when the diagnosis is correct. The relief will last for about a year in the average case.

ALCOHOL INJECTION

When only one branch is involved and the patient has had the neuralgia for only a short time, we believe that alcohol injection is indicated as a primary procedure. When the pain returns after alcohol injection, the major operation should be done for permanent cure. The first division is not amenable to alcohol injection and when this branch is involved, the nerve may be avulsed through a short incision in the eyebrow under local anesthesia. This gives relief for about the same period as alcohol injection of the other branches. In cases where the patient is in extremely poor physical condition, deep alcohol injection may be the only treatment advisable, but it should be borne in mind that there are few patients with tic douloureux whose condition will not

permit the major operation. Vascular hypertension is commonly found among these patients and it may be said in passing that with the relief of pain there is usually an appreciable lowering of blood pressure.

When more than one branch is involved, and particularly if the patient has already received a preliminary alcohol injection with recurrence of pain, we advise the radical operation for permanent cure.

The method for permanent cure of tic douloureux was suggested by Spiller to Frazier in 1901. This consisted of dividing the root between the ganglion and the pons in the temporal fossa. Prior to this a much more difficult operation was being done by Cushing in which he removed the ganglion. The technic of the temporal operation in its present form is largely due to Frazier with contributions from many others. It is possible in this operation to preserve the motor root to the muscles of mastication, also to spare the portion of the sensory root that supplies the eye when it is not involved in the pain. In this way the patient will avoid the risk of corneal ulceration.

Although most of these patient are old people with cardiovascular renal disease, there is no operation of such apparent magnitude from which more rapid recovery is made. Often the patient is ready to sit up the following day and it is difficult to persuade many of them to stay in the hospital more than three to four days. Hospitalization for more than a week may be required for patients in a debilitated condition prior to operation. The results of operation for the permanent cure of tic douloureux are among the most gratifying in neurological surgery.

Tic douloureux involving the ninth or glossopharyngeal nerve is a rare type of neuralgia. It is very similar in many respects to tic douloureux of the fifth nerve, the difference being due to the location and distribution of the two nerves. The paroxsysms of pain in ninth nerve neuralgia are precipitated by some stimulus to the mucous membrane supplied by the nerve. A typical history of such neuralgia is severe stabbing pain beginning in the tonsillar region and radiating to the ear on the same side. It is initiated by swallowing food and liquids which come in contact with the trigger zone in the mucous membrane over the tonsils and side of the pharynx. Swallowing of saliva which causes the contraction of the muscles of the pharynx, precipitates the paroxysms, so that the patient's rest is seriously disturbed. The diagnostic test for this type of neuralgia is painting the tonsillar area with cocaine. If this prevents the paroxysms when the patient swallows or drinks, then one may assume the pain is that of glossopharyngeal neuralgia. No form of nerve injection is applicable to this type of neuralgia and the treatment consists of dividing the ninth nerve intracranially in the cerebellopontine angle, which is probably the simplest operation in the posterior fossa.

Incurable malignancy of the face, tongue and jaws is characterized by intense suffering, and relief of pain in such conditions is imperative. While little can be done to save the patient from his doom, at least he can be made more comfortable. Malignancy about the face, tongue and lower jaws generally shows involvement of a number of sensory nerves so that operation to be effective must be extensive. When the tongue and submaxillary triangle are involved, the fifth, intermediate, ninth and a portion of the tenth cranial and the first, second and third cervical nerves may take part in conveying the painful impulses. Therefore, all of these nerves may require division.

SUMMARY

There is a large group of patients with intractable pain which can be relieved by dividing the sensory nerve supply to the region involved or by section of the pain tracts in the spinal cord.

Neurosurgical procedures for relief of pain are most frequently required for compression of the spinal nerve roots by intervertebral disc lesions and for tic douloureux of the fifth nerve.

The intense suffering of malignant disease can be relieved by section of appropriate sensory nerves or by division of the pain tracts of the spinal cord. Operation for pain due to malignancy is done solely for the relief of suffering and such operation should be done before the patient becomes addicted to the use of drugs.

Intractable pain resulting from peripheral vascular disease, angina and other painful conditions affecting the sympathetics are not included in this discussion.

OTOLARYNGOLOGY IN GENERAL PRACTICE*

By HENRY M. GOODYEAR, M. D.
Cincinnati, Ohio

PERHAPS 20 per cent of a general practitioner's patients are people who seek treatment primarily for some disturbance about the nose, the throat or the ears. Otolaryngology, therefore, is of particular interest to him.

The doctor is daily confronted with mild to severe lesions of the throat. Perhaps one of the most painful lesions is that of peritonsillar abscess, indicated by unilateral swelling in the region of the soft palate. As the abscess develops, the movement of the palate is restricted and it can no longer be elevated when the patient attempts to say "K." At the same time swallowing becomes more and more difficult until the patient may not be able to swallow even saliva.

As soon as the swelling is definitely localized and the motion of the palate limited, the abscess should be opened by an incision through the soft palate (anterior pillar), made by pressing a very sharp bistoury or a pointed Bard Parker knife through the area above the tonsil as one would a hypodermic needle, and then widening the opening with a cutting motion toward the midline. A hemostat is then used to dilate the wound. An application of 20 per cent cocaine can be applied beforehand and if the method just described is used and the pressure applied slowly and firmly, the patient will experience very little pain. The abscess must be kept open until all drainage has ceased, and the tonsils should be removed within two weeks thereafter, before the tissues become too fibrous and hard.

THE AUTHOR

Dr. Goodyear, graduate Northwestern University School of Medicine; Interned Cook County Hospital, Chicago; Manhattan Eye, Ear and Throat Hospital, New York; postgraduate, Vienna, Berlin, London; Associate Professor Otolaryngology, Cincinnati Medical College; Fellow American College of Surgeons; American Otological; American Laryngological; American Academy of Ophthalmology and Otolaryngology.

Ulcerations of the pharynx should make one suspicious of agranulocytosis, and a blood count is indicated.

When a Vincent's lesion is present involving the tonsils and the gums an application of a solution of 10 per cent copper sulfate will be of much benefit.

A retropharyngeal abscess, which usually occurs before the age of two years while the retropharyngeal glands are still present, is always dangerous. The child has difficulty in breathing and often lies with the head retracted and turned toward the side of the lesion. If there is difficulty in making the diagnosis a lateral roentgenogram will show a distinct swelling of the tissues anterior to the spine in this region. The method of treatment in these cases is most important. One should be prepared to do a tracheotomy at

*Presented before the seventh-sixth annual meeting of the West Virginia State Medical Association, Charleston, May 17, 1943.

the time of operation and I have advocated for many years the aspiration of the abscess prior to incision, by means of a 30 cc. syringe and a large trocar needle, and dilatation with a hemostat. This procedure is not difficult and 1 or 2 ounces of very thick pus may sometimes be withdrawn before making the incision, thus eliminating the danger of aspiration.

Should sudden profuse hemorrhage occur following a peritonsillar or retropharyngeal abscess, ligation of the common or external carotid artery is the safest and only reliable procedure in these extreme cases, which have had an erosion of a branch of the carotid as a result of a throat infection.

WHO SHOULD OPERATE?

The question comes up as to who should do tonsil and adenoid operations. The answer, of course, is, any physician who has been trained to do this particular type of surgery, whether he specializes in this field or not. An appendectomy may be easy compared with many tonsil operations and anyone doing a tonsil operation should be prepared to cope with a hemorrhage at, or following, operation. An adenoid operation is as important as a tonsillectomy and great care must be exercised not to damage the area in the region of the eustachian tubes since impairment of hearing may result. I feel that the adenoid area should be carefully examined at each operation by means of a palate retractor, and all bleeding points grasped with hemostat before the patient leaves the table.

With infections of the neck and the floor of the mouth we should not forget that the patient can be saved much suffering by placing a catheter through the nose and into the esophagus for feeding purposes and maintenance of fluids, as this eliminates much painful swallowing.

Ludwig's angina probably occurs most frequently following extraction of the lower posterior molars and is always a grave lesion. Early x-ray treatment is indicated, followed if necessary, by fairly early incision in the midline which will permit the passing of a hemostat or drains to either side into the area below the mylohyoid muscle. Should the infection be above this muscle, an incision in the floor of the mouth is indicated. The old, horrible incision from ear to ear for Ludwig's angina can usually be avoided by the midline incision.

Calculi occurring in the submaxillary gland and along the duct should be removed through the floor of the mouth. So far I have never failed to remove a calculus from the gland by this method. It gives one rather a direct approach and usually eliminates an external incision and often a vain search through thick, soft tissues.

It is necessary to emphasize again that hoarseness persisting for a period of from four to six weeks usually means a lesion in the larynx which may well be a cancer. Such a lesion is comparatively easy to eliminate if discovered in time. A thyrotomy can be done and a unilateral lesion removed with the maintenance of a useful voice and adequate breathing space. It is unfortunate that patients still come to us with a history of having had hoarseness of six to eighteen months' duration, and yet in all that time the larynx was never examined.

IMPORTANCE OF X-RAY

I also wish to emphasize the importance of x-ray of the chest in children who suddenly develop difficulty in breathing and cough. Often these patients, although they have no temperature, are treated for pneumonia for days or weeks before roentgenograms are made to reveal a foreign body. These cases should be examined without delay through a bronchoscope.

It may be assumed that patients who have a cough which persists two weeks or more following a cold have a nasal antrum infection until proved otherwise. These infections respond well to local treatment but too often the patient goes on for three or four months with a bronchial cough and postnasal dripping, at the end of which time considerable damage has been done.

Frequent antrum irrigations can be eliminated by the injection of 27 per cent iodine in oil every week or ten days. Usually one to three injections is sufficient to clear up the acute cases. It is surprising that even in children six years of age injection can be done under local anesthesia by means of a small cannula through the normal opening.

Iodine in the form of calcidin or syrup of hydriodic acid is most important in children as well as adults with frequent colds and red swollen granulations of the pharynx.

Furuncles of the anterior nares should not be opened until they are thoroughly localized and then they usually rupture spontaneously. Aluminum acetate or magnesium sulfate with a small amount of sodium chloride added, makes the best dressing for these cases. Let a pledget of cotton be soaked in the solution and placed gently in the nose to remain for twenty to thirty minute periods.

FRACTURES OF THE NOSE

In fractures of the nose do not be misled by, or depend upon, roentgenograms for a diagnosis. Very little is to be learned by an anterior-posterior view and a side view shows only the breaking off of the bony tip. Your own observation is most important. If the nose is displaced or depressed it should be corrected at once. An application of 10 per cent cocaine in the nose may be sufficient, or a general anesthetic may be necessary. By means of a flat instrument such as a submucous elevator, pressure may be applied from the inside and the nose elevated and placed in normal line. Usually no splints are necessary to retain the nose in this position, once it has been replaced. Too often we see marked deformities and a bad breathing space because nothing was found upon x-ray at the time of injury. Do not depend upon x-ray in these cases.

Look carefully for hemorrhage into the septum and in such case drain immediately by cutting a large window in the mucoperichondrium on one side of the cartilage; to delay means an abscess, loss of cartilage and an ugly deformity.

Remember that 90 per cent of all bleeding from the nose comes from the anterior area of the nasal septum and can usually be seen even without a head mirror. Often I see patients who have had their entire nose packed and sometimes even postnasal plugs inserted for a bleeding which I find is perfectly evident and accessible. Remember that a wad of packing as large as a thumb, placed in the anterior nares, with pressure applied against the side of the nose, will usually stop most nasal bleeding. A small application of 10 per cent cocaine, followed by a small application of 50 per cent silver nitrate held firmly against the bleeding point will usually permanently eliminate this particular vessel. Electrocoagulation and more drastic cauterization are not usually necessary. Following this treatment give the patient a prescription for ½ ounce of lanolin containing a grain of menthol and instruct him to apply a small amount each evening to eliminate the dryness.

Nasal hemorrhages occurring from far back in the nose are often indicative of some general vascular disturbance and the forerunner of impending degenerative changes. They are often a bad omen.

TREATMENT OF ACUTE COLDS

I would like to say a few words in regard to the treatment of acute colds. In 1939, before a meeting of the Michigan State Society, I advocated the use of hydrochloric acid and sodium chloride in preference to soda and alkaline drinks, based on the belief that most people are in an alkaline state at the onset of an acute cold. I am convinced more than ever that this theory is correct and you will find that a teaspoonful of salt in a glass of cold water taken once or even several times during the first day of an acute cold will be much more helpful than soda bicarbonate. I have found also that 5 to 7 drops of dilute hydrochloric acid taken at thirty to forty minute intervals for five or six doses at the onset of a cold may give immediate relief. The taking of large quantities of orange juice and grapefruit juice is often very bad for the

patient. It is unfortunate that alkaline preparations have been so widely advertised over the radio for the treatment of colds.

The use of most nose drops is greatly abused, especially in infants. One drop of a nasal solution will do as much good as four or five drops and will not get into the lung. There is no objection to the use of atomizers and in the case of an acute rhinitis or sinusitis the following combination will give considerable relief:

Cocaine hydrochloride grains 1
Solution of neosynephrine ½%
Saturated solution of boric acid aa ounces ½
Directions: Use in atomizer.

In using an atomizer, spray one or two puffs with a fine atomizer and then wait five to ten minutes before applying again as the first spray can strike and reduce only the swelling in the anterior part of the nose. Most people, however, will attempt to inject quantities of the solution but must, of course, await the gradual reduction in the swelling to get relief.

LESIONS OF THE EAR

This paper will not permit a long discussion of the ear but I would like to emphasize the importance of recognizing small perforations in the attic with intermittent chronic discharge. These are the dangerous lesions which lead to meningitis and brain abscess. These lesions should be cleared up even if a modified radical operation is necessary for elimination of the cholesteatoma which is found in these cases.

The sulfonamides are helpful in acute middle ear infections if used immediately but they may conceal mastoid lesions if given during the second or third week after onset.

Another very important lesion is that of injury to the external ear or pinna with fluid collecting under the perichondrium. If these lesions are not properly cared for, a very ugly deformity may result and there may be an unpleasant suit brought for malpractice. It is best that these lesions be aspirated immediately and then either placed in a cast of dental mold, or treated by pieces of cotton soaked in collodion and packed against the back and front of the ear. If the lesion cannot be relieved after aspiration, an incision should be made through the skin and periosteum in one of the anterior folds or irregularities of the ear, following which a small through and through biting forcep can be inserted in the incision and a window of skin and perichondrium removed from the anterior surface of the cartilage. Through this opening any necrotic or clotted material can be removed and a small packing of gauze inserted. Usually, healing will occur within a few days.

DISCUSSION

Chairman Holcombe: Gentlemen, get your questions ready, please, and we will ask Dr. Goodyear to answer the questions that have come in.

Dr. Goodyear: The first question is: What do you use in seborrheic dermatitis? I have talked with the dermatologists and I find that they are pretty much agreed today that among the preparations that are probably most helpful are mercury nitrate and merphyl borate. Merphyl borate ointment has been accepted by the Navy as routine treatment for seborrheic dermatitis. It is a vanishing cream which is not greasy, and can be rubbed into the scalp every night. After four or five days (merphyl borate has a slight metallic odor) it can be washed out with a green soap or a neutral soap.

Another preparation that I find to be very helpful is tincture of merphyl borate 1:500. Personally, I have found this to be one of the most effective treatments for dandruff. It is a nitrate of mercury preparation. You can use a dropper or a bottle if you wish, and you will be surprised at the result. If this preparation is used for a little while the whole scalp will clear up. It is a lot easier to use than the old sulphur preparations. Sulphur and salicylic acid ointment has always been the preparation generally accepted for seborrheic dermatitis.

Question: Do you find sulfathiazole ear drops of any advantage in early acute otitis media or in chronic draining ears? What is the best treatment for chronic otitis media? That is a good question. Personally I don't use irrigation in an acute ear infection that is draining. We instruct the mother to change the big wad of cotton in the external ear every ten or fifteen minutes, or whenever it gets

soiled, and maybe put a little cotton on an applicator and wipe out the ear. If the skin becomes irritated, a 3 or 5 per cent precipitate of white ammoniated mercury may be used to protect the skin. I have never been convinced that a patient who receives irrigations every two or three hours fares any better than a patient who receives this ordinary treatment. If you teach the mother to irrigate an ear in a child two or three years of age and he squirms and fights, the canal is often injured, water gets into the canal, and some of it stays in there. Irrigation only cleans out the external ear anyway, because the middle ear doesn't even exist as a space in an acute middle ear infection; it is only about half an inch high and half an inch wide, and with the mucous membrane swollen the walls are in apposition, and irrigation only irritates the canal.

Where does all the suppuration, all the fluid, come from in these draining ears? It must come from only one place, and that is the mastoid cells. You have a mastoid infection always with an acute middle ear infection, and in three or four days a mastoid tenderness is present because the periosteum becomes tender. The tenderness disappears after a few days, but if it recurs in the second or third week it indicates usually that the bone is breaking down under the periosteum, and very often you have to do a mastoidectomy in these cases. We seldom do a mastoidectomy under ten days or two weeks, except in old chronic cases. In old chronic cases, especially in the small perforations, if there is an acute cold and flare-up, very often you have to operate in twenty-four or forty-eight hours or the patient gets meningitis, because the bone is so sclerosed that it cannot come to the surface and it goes the easiest way, toward the dura.

Question: How do you treat these cases if there is a purulent discharge from the ear? Well, we do not irrigate them. We dry out the ear. There are granulations present which bleed easily if you wipe them, and we apply the old favorite, 10 per cent solution of copper sulfate. Have it on your treatment table. It is wonderful. It doesn't coagulate on the surface as silver nitrate does. Silver nitrate gives a white coat, but the copper sulfate penetrates deeply. Apply it once or twice a week or let your patient dry the ear. Then use only 5 per cent copper because a 10 per cent solution burns a little, and 5 per cent will dry up the granulation. It is the best treatment I know. If you have a little perforation high up, surgery is indicated, unless it clears up and you are absolutely sure it is healed.

Question: A child eighteen months old continues drainage; old perforation of the ear; adenoidectomy done; now suggest tonsillectomy. Sulfathiazole will stop drainage only temporarily. Will a radical be necessary if tonsillectomy does not give permanent relief?

No, I do not believe so. I would do a tonsil operation and if he has a chronic ear infection and is eighteen months old you will find a simple mastoidectomy will usually clear it up. After you have done a simple mastoidectomy, you must keep the posterior wound open until the middle ear is dry. You have to watch the middle ear until it clears and dries, because in children there is a perforation some place in that ear with chronic drainage. If the child is only eighteen months old, we usually try the simple operation first, but carry operation forward so that the middle ear is pretty well exposed. We expose much farther in the middle ear in a child or infant than in an adult, I would try the tonsillectomy first and the adenoid area again before I did anything else.

Question: Are there any bad effects following a ligation of the common carotid? Well, we had a hemiplegia following the ligation in one of our patients, a man about 40 or 50 years of age, but it cleared. For some months he was rather weak on one side, but he finally recovered. That is the worst complication we have had. In most of the cases we have had no trouble as far as ligating the vessel is concerned.

Question: How late in the progress of ear infections do you suggest a simple mastoidectomy? I believe that if you cannot clear up an ear by removing the adenoids and tonsils, and it continues to drain for from four to six weeks, you had better open the mastoid and clear up the ear rather than let it drain for weeks or months and develop into an old chronic ear infection. If these ears are not improving after four to six weeks, operate; but if they are showing improvement and the secretion is becoming daily more mucoid in type, you can carry on a little longer.

Question: What age should a child be before you remove the tonsils and adenoids? Once in a while a child is born and is ready for an adenoid operation. We have had infants that couldn't nurse because the adenoids were so large that the nasopharynx was closed and we have had difficulty feeding these patients. Within a few weeks we have taken out the adenoids in these infants, and have gotten a perfect result. They start nursing, breathe

through the nose, and go on very well. Of course, in these cases you have to look, too, for postnasal atresia; not often found. Sometimes they have a big mastoid, and it must be removed; they have to have air through the nose in order to nurse well. If they have to stop nursing every second or every minute to get air, I think adenoidectomy is indicated. As far as removing tonsils is concerned, if they are diseased I would say remove them even at eighteen months or two years. We don't do so many at that age. I would say most of our cases are perhaps even three years. Between two and three years is a young case, but the idea of leaving a patient until he is five or six years old to remove the tonsils and adenoids just because of his age is absolutely wrong. A patient can develop a deformity that will stay with him for life, and it can develop in a matter of six months. If the child is a mouth-breather and has a marked adenoid obstruction, I don't care what his age is, give him relief, give him breathing, otherwise he will have a bad deformity that you can never correct. Some of them get it just because the family doctor says, "Oh, you must not remove them until the child is five or six years old." By that time a lot of the damage has already been done.

Some of these patients get relief on small doses of iodine and thyroid when they have a lot of adenoid and tonsil tissue. Sometimes if you will give them small doses of iodine or even 1 grain of calcidin a day, and perhaps ¼ of a grain of thyroid (I don't hesitate to give a child four or five years old, if he is a little fat, even as much as a half grain of thyroid a day for ten days or two weeks), it is surprising what it does for some of them. They have fewer colds and begin to cut up and do very well after the iodine.

Question: Do you consider a lesion in the back part of the throat as necessarily fatal? Well, I don't see that a lesion in the nasopharynx should be fatal. The worst lesions we have in the nasopharynx are ulcerations that indicate agranulocytosis; you will find that the patient has a low white count and these cases are difficult to bring back; blood transfusions are about the only thing that keeps them alive.

Question: What form of iodine should be used? In our children we often use syrup of hydriodic acid or 1 grain of calcidin tablets if they can swallow tablets. Calcidin has the highest available iodine of practically any product on the market, except the syrup of hydriodic acid.

Retropharyngeal abscess should not be fatal, but we have had patients in whom it was fatal. The abscess perhaps drains, and a week or ten days later there is a sudden hemorrhage, pouring out of the nose and out of the mouth, which stops, and we get the patient to the hospital. These patients look very white and washed out, and we have had one or two of them die in the operating room. We get them just to the operating room, thinking, "Well, we will get in and tie the common carotid artery," but before we get it tied they go out—another big hemorrhage.

In one case of that type that was particularly bad, one of the men in the hospital room just put his finger on the common carotid, pressed it upon the fifth cervical vertebra and held it until I got in and tied the carotid artery. The child was practically unconscious and no anesthetic was necessary. I cut down and got the common carotid artery, tied it off, and we gave the child a blood transfusion and it recovered.

Another thing that you have to think about in fatal lesions of the nasopharynx is epithelioma or cancer. Not long ago I saw a patient who had been treated for perhaps a year and a half; she had glands in the neck on both sides which were freely movable. That patient had a small epithelioma in the nasopharynx, a malignant growth back of the soft palate. I feel that in those patients who have glands in the neck of which you do not know the origin, you may find a malignant gland. If you look for the source, you will find it in the nasopharynx. These cases are fatal. We have had no operations in these cases in which the patient has lived. They have all died, even with x-ray treatment and rather radical operations. If cancer once appears in the nasopharynx and gets well established, I don't know how you are going to keep the patient from dying.

GAIN IN LIFE EXPECTANCY

The average length of life of the American people has increased by almost one-third since the beginning of the century. Expectation of life at birth in 1941 was 64.36 years—a gain of more than 15 years since 1901. As a result of the current favorable health situation, about 60 per cent of the large group of babies now being born will live to age 65, while in 1901 only 40 per cent would have been expected to attain that age.—Metrop. Life Insurance Statistical Bulletin.

EARLY DIAGNOSIS OF THE ACUTE ABDOMEN*

By MAJOR JOSEPH A. SOFFEL, M. C., A. U. S.
Pittsburgh, Pennsylvania

THE AUTHOR

Dr. Soffel, graduate University of Pittsburgh; Associate in Surgery, The Western Pennsylvania Hospital U. S. Army General Hospital, overseas.

CONSIDERATIONS of early diagnosis of the acute abdomen actually divides itself into two parts: (1) the diagnosis in the home and (2) the diagnosis in the hospital. In establishing the diagnosis in the home, the doctor has, as a rule, only the history and the physical examination on which to base his conclusions. The facilities for examination are often meagre. The lighting may or may not be satisfactory. The bed is frequently low and had sagging springs which make a thorough examination very difficult. Under these conditions, the doctor who takes the history, examines the patient, and makes the diagnosis, has my profound respect and admiration. The important decision to make at this time is whether the patient will recover at home under conservative treatment, or whether he requires immediate hospitalization. This decision cannot always be made immediately. A valuable method of determining the answer to this question is to administer some gentle remedy which will not mask the symptoms, and return to see the patient in several hours in order to note any variation in the symptoms. This gives the doctor time to think over the history and physical findings.

When the patient is first seen, the history is very valuable. The first consideration is the symptom which caused the patient to call the doctor. In consideration of this symptom a clear description should be obtained in chronological order beginning with the time of onset as following the period in which the patient previously felt well; next, the mode of onset, whether it was sudden or gradual; finally, the degree of severity, whether the symptom was prostrating or whether it was dull or of increasing severity. The next consideration is: the association of the chief complaint with the various systems of the body, i.e., association with symptoms referable to the head and neck, cardiac or pulmonary system, the digestive tract, the genito-urinary tract, the pelvic organs, or the nervous system. Following this analysis a consideration of symptoms referable to the nervous system in themselves will often bring out other signs or symptoms which the patient has failed to mention. The history of previous attacks must be obtained.

No examination of the patient is complete without ascertaining his temperature, which immediately classifies the illness as to whether or not it is on an infectious basis. Examination of the eyes, ears, nose, throat and neck are in order. In examining the lungs, a consideration of the respiratory rate is paramount. An increased respiratory rate immediately suggests the involvement of the lungs, pleura, or diaphargm. In examining the cardiovascular system, the pulse rate is first in importance; next, the blood pressure and cardiac findings.

Examination of the abdomen is then made. This should be done with as close an approximation of ideal conditions as is possible under the circumstances. The abdomen should be bare, there should be no lumpiness of the bed clothes to interfere with proper palpation, and the light should be as adequate as possible. Inspection of the abdomen will reveal the type of abdomen, the presence or absence of distention, and will avoid the pitfall of overlooking a hernia. Palpation should be done with the examiner's hands warmed in order to avoid the cutaneous reflex, and

*From the Department of Surgery, The Western Pennsylvania Hospital, Pittsburgh, Pennsylvania.

should be gentle to avoid muscle spasm. It is advisable to palpate the portions of the abdomen situated farthest away from the lesion first. The palpation should be done systematically, choosing each quadrant in turn and usually using both hands flat on the abdomen. The patient should be instructed to breathe deeply with the mouth open and great muscle relaxation can be obtained in following the excursions of the abdomen downward as the patient exhales, holding the same position for further respirations. Tenderness, muscle spasm, or masses should be recognized in this manner. Following this, one hand should be placed deep in the lumbar fossa over the kidney and the other on the anterior surface of the abdomen, and each kidney region carefully palpated; next, the external and internal inguinal rings should be examined for herniæ.

The pelvic examination should then be made in a similar way, unless there is some definite contraindication for the same. Careful bimanual examination should be done after the bladder has been catheterized, and should include inspection of the genitalia for discharge, cystocele, or rectocele. The cervix should be located, its position and mobility noted, as well as the presence or absence of laceration. The fundus of the uterus should be sought, its size, position, and mobility noted. Both adnexæ should be palpated for the presence of tenderness or masses. Lastly, we come to the cul-de-sac. With the middle finger in the rectum and the index finger in the vagina, the presence of a mass in the cul-de-sac can be frequently recognized. Neurological examination should be made if indicated.

APPENDICITIS

In the diagnosis of appendicitis, a typical history will usually include a dietary indiscretion, a sudden onset of pain which is usually diffuse at first and later becomes localized in the right lower quadrant, followed by nausea and vomiting. Physical examination usually reveals the presence of a low grade temperature, pain and tenderness in the right lower quadrant, muscle spasm, and, when the patient is seen at a later period, rigidity at this point. It is difficult at times to make this diagnosis for several reasons. First, the appendix may be in an abnormal position, i.e., in the pelvis, to the left of the midline, retroperitoneal, or extraperitoneal. The additional examinations which can be made after the patient is hospitalized are the examination of the catheterized urine specimen to eliminate pyelitis, and a leukocyte count, which, if elevated, is indicative of infection. The presence of an ileocolitis or mild influenza may mask the characteristic symptoms of peritonitis.

In the consideration of acute appendicitis, one must not overlook acute extra-abdominal lesions, parietal neuralgia, etc. These conditions may be misleading, but in the presence of symptoms which establish the diagnosis of acute appendicitis, operation should be undertaken. The delay caused in attempting to reach the correct diagnosis may result in the rupture of the appendix.

GALLBLADDER DISEASE

In the diagnosis of cholecystitis the patient usually gives a history of gastro-intestinal distress over a moderately long period of time, dyspepsia, frequent indigestion, and frequent consumption of alkalies in the attempt at self-medication. The pain is usually referred to the right upper quadrant, or right shoulder. The physical examination shows an elevation of temperature, and, possibly, of respiration, tenderness in the right upper quadrant, muscle fixation and rigidity. Acute cholecystitis will usually subside following a sedative, and in a few days jaundice may appear. When the pain persists and becomes aggravated in spite of sedation, one must consider impaction of a stone in the cystic duct. If the patient becomes seriously ill, the pain prostrating, and a high leukocyte count and temperature are present, empyema of the gallbladder must be considered. In cholelithiasis the patient gives a history of attacks of pain which are relieved by hypodermic medication, and recurrent

attacks following dietary indiscretion. Stone in the common duct is diagnosed by the presence of continuous jaundice with intermittent periods of pain. Malignancy of the biliary system is diagnosed by a painless jaundice which gradually increases in severity, and the patient continues to go down hill in spite of treatment. Diseases of the gall-bladder occurs more frequently in women of middle age, and in women and men who are overweight.

KIDNEY AND URINARY TRACT LESIONS

Nephrolithiasis and pyelitis are considered not from the acute abdominal standpoint, but from the standpoint of the differential diagnosis. The pain in the presence of a kidney lesion is usually sudden and severe; in fact, it is excruciating in character and cannot be relieved except by large doses of morphine, or drainage of the urine from above the stone by means of a retrograde catheterization, or by nephrotomy. The pain is referred to the back in the higher lesions, the down the flank toward the genitalia. Stone in the urethra about the level of the appendix will frequently simulate an intra-abdominal condition. A calculus lower down will cause pain referable to the testicle or vulva. Pain due to infection of the urinary tract or a clump of pus blocking the ureter is less severe. These urinary conditions are usually accompanied by frequency or dysuria. The pain preceding voiding is usually due to the ureteral condition, the pain during voiding to a urethral condition, and pain after voiding is usually due to an inflammation of the bladder. The presence of many white or red blood cells in a catheterized specimen is of definite diagnostic value.

Ruptured bladder, either intraperitoneal or extraperitoneal, usually follows an injury in which there has been violence applied to the abdomen or in which the pelvis has been fractured. Diagnosis is made by catheterizing the bladder and obtaining blood, injecting a volume of sterile solution into the bladder, and measuring the amount withdrawn. Where the injury has been intra-abdominal, it is usually noted that there is pain, tenderness, and rigidity of the abdomen. The patient may or may not suffer shock. Exploration is required at times to differentiate whether the injury is intra-abdominal or extra-abdominal. X-rays of the pelvis are of value in arriving at the diagnosis of extraperitoneal injuries.

Acute indigestion frequently follows a dietary indiscretion. The interval is usually three or four hours, the pain is severe and is referred to the epigastrium. There is no rigidity in the lower quadrant, the tenderness usually being confined to the intercostal angle of the xyphoid. The diagnosis is usually made on the basis of the history and the absence of temperature.

GASTRIC AND DUODENAL ULCER

Peptic ulcer is diagnosed on the basis of the history of previous attacks of indigestion and dietary indiscretions over a long period of time. The pain associated with gastric ulcer usually follows immediately after eating and is of a gnawing character, while the pain of duodenal ulcer usually comes on several hours after a meal, and is described as being a hunger pain. The pain due to ulcer usually occurs at definite time intervals following eating, and in most cases can be relieved by alkalies or food. The diagnosis of perforation of an ulcer is made on the basis of the history of the ulcer, the sudden onset of severe pain in the upper abdomen, with tenderness either in the right upper quadrant or in the epigastrium, followed in a short interval by rigidity. The patient, immediately following perforation, will go into shock and break out in perspiration; the skin will be sold and clammy; the temperature will be normal or subnormal. One may be readily misled when an ulcer perforates into the lesser omental cavity as the symptoms will be less severe, and the patient will improve; in cases where a leakage has taken place, infection will supervene and may require a later operation with drainage of the resultant abscess. Gastric hemorrhage indicates either gastric ulcer, which can be diagnosed from the history, or ruptured

esophageal varix, which can be diagnosed on the basis of the age and the type of individual, and the presence of arteriosclerosis and hypertension. Ulcers occur more frequently in men, and in the thin type of individual.

Malignancy of the stomach must be considered when diagnosis of the acute abdomen is made. However, there will be usually an antecedent history and ample time will be given for x-ray and correct diagnosis.

Mesenteric thrombosis cannot be recognized preoperatively. The onset is sudden and severe, the patient has excruciating pain, tenderness and rigidity, and on exploration there will be found gangrene in the portion of the intestine supplied by these vessels. Preoperatively, the diagnosis is most often obstruction, or it may be undetermined, with only the knowledge that some acute process is present and laparotomy is necessary.

Intra-abdominal hemorrhage is usually diagnosed following an accident in which there has been sudden trauma, either to the anterior or posterior abdominal wall or following a fall from a great height. The patient is in shock, the skin is cold and clammy, the pulse rate is increased, respiration is usually increased, the abdomen is tender all over, and there is muscle spasm at many points on light pressure. The symptoms may subside and recur. Localization may be noted at the site of the spleen or liver following trauma to these sites.

Perforation of the viscus occurs following violence to the abdomen as of a blow or crush, and has also been caused by the injection of compressed air. The symptoms are sudden severe pain, shock, rapid pulse, with the skin cold and clammy, the face drawn, and the temperature normal or subnormal.

FEMALE GENERATIVE SYSTEM

Ectopic pregnancy is at times difficult of diagnosis. There is usually a history of a delayed menstrual period and some spotting from the vagina, followed by sudden, severe pain in the lower abdomen. On examination, blood may be present in the abdominal cavity. On pelvic examination, the uterus may be somewhat enlarged, causing uncertainty as to whether the diagnosis should be that of ectopic gestation or inevitable abortion. The rupture of a graafian follicle with hemorrhage is at times difficult to diagnose in that the classic symptoms of blood in the abdomen are usually present, but the hemorrhage usually takes place about midway between periods. The Ascheim-Zondek test is valuable in these cases.

Salpingitis may be occasionally difficult of diagnosis. There is usually a history of vaginal infection, cystitis, pain, burning, frequency, etc., and of vaginal discharge. The date of onset of these symptoms is important. The onset of tubal infection is usually close to the time of the menstrual period. The accompanying abdominal tenderness and rigidity are for the most part of lesser degree than in the other abdominal conditions, and pelvic examination will be of aid in outlining a mass and noting the presence of a discharge. The cases of longer standing will have a mass in the cul-de-sac.

Parametrial infection is diagnosed on the basis of abdominal pain, tenderness and rigidity, and on the history of some intra-uterine manipulation, frequently criminal in character.

INTESTINAL OBSTRUCTION

In obstruction of the bowel, the patient who has previously been fairly well, notices that he is unable to obtain any evacuation, and regardless of the immediate measures applied, the pain persists in the abdomen and becomes more severe.

In early obstruction there is usually no rigidity, but in later obstruction, early infection has taken place, a localized peritonitis is set up, and the classic symptoms of peritonitis are present: pain, tenderness, and rigidity. The later symptoms of obstruction are vomiting; the higher the obstruction, the earlier the vomiting. The age of the individual may be of some value in arriving at the diagnosis. In children, especially males about the age of two, such sumptoms suggest intussusception. In this type of case, the bowels cannot be

emptied, but blood comes from the rectum and the abdomen is soft, and a mass may be palpated following the course of the colon. In other obstructions, the presence of abdominal scars suggests the possibility of adhesions. A previous history may suggest the type of adhesions. In older individuals the possibility of malignancy of the large bowel requires consideration. In this latter type of case the patient will have noted change in bowel habit, either constipation or diarrhea, and in the later cases the narrowing of the stools.

In obstruction due to hernia, careful examination of the internal and external hernial openings will ordinarily serve to recognize the presence of a hernia, particularly where there are symptoms of obstruction which would require operation. A hernia which is causing obstruction is usually palpably visible, hard, and irreducible. The early hernia which causes obstruction is incarcerated. When operation is delayed and swelling and edema take place the hernia becomes strangulated; in those cases in which operative delay is longer, the herniated portion of bowel becomes gangrenous, and resection and anastomosis may be required. In cases of obstruction, the longer the operative delay, the greater the mortality and morbidity. The average case should be operated on within a few hours after the obstruction takes place, and immediately after obstruction is recognized as such.

OTHER CONDITIONS

Stab and gunshot wounds of the abdomen are readily recognized by the examination of the portal of entry. They usually require immediate operation, inasmuch as no conception of the intra-abdominal injury can be obtained except by exploration.

Ileus, or paralysis of the intestinal tract, occurs at times following operation, dehydration, in cases of severe nephritis, and after an obstruction has persisted for some time. It can be usually relieved by continuous duodenal suction and the administration of some of the stimulants to peristalsis, such as prostigmine and peristaltine. At times, however, an operation is necessary, and decompression with a tube above the site of the obstruction.

Acute pancreatitis must also be considered. The pain is excruciating in character and is referred to the back; in fulminating cases, shock supervenes. This condition may simulate perforated ulcer, and operation will be undertaken, at which time the normal intestinal tract will suggest exploration of the pancreatic fossa, with consequent recognition of the pathological condition.

Foreign bodies in the abdomen frequently require surgical removal. Those which are smooth and less dangerous should be followed by means of frequent x-rays. They are often eventually passed. Incidental foreign bodies are sometimes found at operation. One of our cases had a piece of toothpick in the appendix which the patient did not remember having swallowed.

EXTRA-ABDOMINAL CONDITIONS

I wish to mention briefly some extra-abdominal conditions which may give rise to symptoms resembling the acute abdomen. Walsh, Morgan, Paullin and Bolen have recently mentioned thirty or more cases of poisoning by bite of the Latrodectus mactans (black widow spider). The outstanding complaint of these patients is acute, severe abdominal pain associated with marked intense muscular rigidity, leukocytosis, and occasionally, fever. Stevenson reports three cases of epidemic encephalitis in which abdominal pain simulated an acute surgical lesion. The correct diagnosis was subsequently made by the appearance of diplopia, myoclonus, widespread hypersthesia, and lethargy. Pneumonia, diaphragmatic pleurisy, periphrenitis, herpes zoster, tonsillitis, and the onset of some of the acute infectious diseases such as scarlet fever, measles, mumps, rheumatic fever, influenza, and typhus fever must be kept in mind.

Chronic poisoning with heavy metals, such as lead, arsenic, and mercury, will cause pain. The pain of Pott's disease and the abdominal crises seen in tabes dorsalis are well known.

Osler includes Henoch's purpura, angioneurotic edema, urticaria, and other states in which abdominal pain with or without skin manifestations may be the most striking symptom. Allergy may produce reactions which simulate acute surgical abdominal pathology. Arteriosclerosis, atheromatosis, thrombo-angiitis obliterans, angina pectoris, and sudden occlusion of the coronary artery furnish examples of abdominal pain which are extremely difficult to diagnose correctly. Other conditions, such as septicemia, bacterial endocarditis, pyelitis, pyelonephritis, renal and ureteral calculus furnish further pitfalls. We must also consider certain diseases of the central nervous system, such as syphilis, transverse myelitis, primary or secondary tumors of the spinal cord and its coverings, infiltrating tumors, osteoarthritis of the spine, tuberculosis of the spine, and scoliosis with arthritis, all of which frequently cause pain referred to the abdomen.

The old dictum of considering the most likely diagnosis first is still worthy of attention; however, when the clinical picture is incomplete or some important finding is lacking, the careful clinician will weigh the balance thoroughly, deciding between the risk of early operation with a probable diagnosis, delayed operation with a search for diagnosis (which may still be doubtful), and the greater risk of allowing some disease process to proceed beyond the time limits of successful surgical treatment.

BIBLIOGRAPHY

1. Alvarez, W. C.: *Severe Abdominal Pains That Follow an Emotional Storm.* Med. Clin. N. A. 19:399, 1935 (September).

2. Beekman, F.: *Treatment of Abdominal Injuries in Children.* Ann. Surg. 90:206, 1929 (August).

3. Billings, A. E.: *Penetrating Wounds of Abdomen.* Ann. Surg. 94: 1018, 1931 (December).

4. Campbell, E. H., Jr.: *Acute Abdominal Pain in Sickle Cell Anemia.* Arch. Surg. 31:607, 1935 (October).

5. Eliason, E. L.: *Early Diagnosis in Abdominal Surgery.* Amer. J. Surg. 31:275, 1936 (February).

6. Eliason, E. L.: *Surgical Emergencies of Abdomen.* Med. Clin. N. A. 18:63, 1934 (July).

7. Gilbert, J.: *Acute Abdominal Injuries.* Texas State J. Med. 31:705, 1936 (March).

8. Guerry, L.: *Surgical Judgment in Our Approach to Acute Abdomen.* S. Car. M. A. Jour. 31:227, 1935 (December).

9. Haskins, J. B.: *Extraperitoneal Pathology With Intraperitoneal Symptoms.* Jour. Tenn. M. A. 29:43, 1936 (February).

10. Hinton, J. W.: *Injuries to Abdominal Viscera.* Ann. Surg. 90:351, 1929 (September).

11. Lehman, E. P.: *Approach to "Acute Abdomen."* Virginia Medical Monthly 57:211, 1930 (July).

12. Lick, M.: *Differential Diagnosis in Abdominal Tragedies.* Penna. Med. J. 39:421, 1936 (March).

13. Maes, U.: *Differential Diagnosis of Right-Sided Abdominal Pain.* Amer. Jour. Obst. & Gyn. 14:364, 1927 (September).

14. Ravdin, I. S.: *Use of Continuous Intravenous Infusions in Acute Abdominal Crises.* Ann. Surg. 97: 749, 1933 (April).

15. Rodman, J. S.: *Acute Abdominal Pain, Associated with Spinal Cord Shock.* Ann. Surg. 90:769, 1929 (October).

16. Staley, J. S.: *Acute Abdominal Emergencies; Diagnostic and Therapeutic Considerations.* Virginia Med. Monthly. 63:296, 1936 (August).

17. Wilkie, D. P. D.: *Acute Infections of Lower Abdomen.* S. G. O. 45:13, 1927 (July).

18. Wolffe, J. B.: *Abdominal Syndrome of Rheumatic Disease in Childhood.* Amer. Jour. Dis. Child. 52: 296, 1936 (August).

TIME COUNTS!

Time makes a difference in many things—among them cancer. It is recognized by the medical profession that cancer deaths could be cut by at least one-third—if the patients were treated adequately in time. "In time" is construed to mean while the cancer is still localized—before it has embarked on a wandering journey of destruction. Often the patient, through his ignorance or through his fear, is responsible for letting the condition get to a sorry impasse. All too frequently physicians are being consulted by patients who have bargained their chance of cure for a period of harrowing worry or blissful ignorance.

Until the day when some radical discoveries are made in the prevention or the treatment of cancer, an informed public will continue to be one of our biggest assets in the struggle to reduce the cancer death rate.

Tangible progress will be evident when every man, woman and child appreciates that "If it's cancer, time counts."—C. B. R. in Nassau Medical News.

INCREASE IN PSYCHOPATHIC CASES

It is freely predicted that war conditions will materially increase the number of psychopathic cases. Already many institutions, notably the psychopathic section in the Indianapolis City Hospital, have reported a marked increase in the number of patients presented for examination and treatment. —J. Indiana State Medical Association.

Tuberculosis Abstracts

Furnished Through the Courtesy of the West Virginia Tuberculosis Association

Much used by both internist and surgeon in other fields of medicine, the fluoroscope has proved a valuable aid in the diagnosis of pulmonary lesions and in the periodic recheck of their progress. A competent examiner, using good equipment, is often able to secure information that may not be ascertainable by means of conventional films, such as the movements of the diaphragm, the contrasting appearance of the expanded or contracted lung, the effect of moving the thorax into different positions before the screen. Warnings that this method should supplement, not replace, good chest films have been frequent. Here is a timely warning of another danger—one inherent in the physical properties of the electric current and of the roentgen ray. This safety first appeal merits serious thought.

Danger From Fluoroscopy

A number of articles have been published concerning the dangers connected with fluoroscopy. Recent measurements have shown that these warnings must be taken seriously and that they concern the whole medical profession. The problem is more acute now when the serious film shortage may call for more extensive use of the fluoroscopic method, and it seems advisable to call attention to a few pertinent facts.

No fluoroscopic unit should be used unless the doctor in charge has convinced himself that the conditions under which it is operated are reasonably safe. A continuous vigilance is necessary, and it is not enough to know that the conditions were satisfactory at one time in the past.

A shock-proofed arrangement should remove electrical dangers but a broken cable or a casual repair may lead to electrical hazards, and many of the old machines have exposed high-voltage leads. Grounding a part of the apparatus may not always serve as protection, and if the ground is applied at the wrong place the danger may be increased. A careful expert inspection is needed and there can be no valid excuse for an accidental electrocution. Such accidents have occurred a number of times.

Roentgen rays from fluoroscopic units have caused innumerable sequelae to both patients and physicians, and serious damages often still result in spite of the knowledge that now is available.

In order to obtain adequate protection, it is first required that the tube be shielded so that no radiation of any consequence escapes in any direction except in the useful beam. This may be checked roughly with a hand fluoroscope or more accurately with a roentgen meter with a sensitivity of 0.01 r or a Geiger-Muller Counter. After this first requirement has been fulfilled several other precautions must be taken.

For any intelligent use of fluoroscopy, it is important to know the amount of roentgen rays reaching the skin of the patient and of the examiner, and that has to be determined by means of measurements. The total dose received depends upon the intensity and the time of exposure. The intensity depends upon a number of factors and varies widely in practice. A reasonable intensity at the skin of the patient nearest to the tube amounts to about 20 r per minute.

A representative of the division of Biophysics, University Hospitals, has recently checked some machines in Minnesota, and has found intensities during routine practice up to 114 r per minute. It is evident that such an intensity is dangerous and must be reduced by proper adjustments. The question is how many of the machines which have never been calibrated are used under similar conditions with an unnecessarily high intensity.

The intensity may be reduced by increasing the distance from the target to the patient. This distance should be at least 28 to 30 cm. It can also be reduced by lowering the current which should not exceed 4 to 5 ma. If the fluorescence is not bright enough the voltage may be raised and it is advisable to use rather high voltage, preferably 80 kv. or 100 kv. if possible with the equipment. With a high voltage a filter helps to lower the intensity considerably and a 1 mm. aluminum filter should be permanently attached.

With the use of 28 cm. target skin distance, 90 kilovolts and 4 ma. and 1 mm. aluminum filter, the intensity can undoubtedly be kept within the safe range, but it is still advisable to have it measured so that the number of roentgens applied per minute will be known.

The time used for an examination should be kept at a minimum. It should be measured and recorded. A foot switch should be used so that the current applied to the tube may be limited to the time of inspection. The use of a timer, which sums

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The President's Page

By the time this issue of The Journal reaches you, the Central State Committee, which was appointed by Council action to assist local medical societies in formulating plans for prepaid medical service, will probably have submitted a basic contract to be used as a model for the contract that will be offered the public in each area. The plan adopted provides that each component society, or group of societies, is to cooperate with the local hospital service organizations in writing the contract. This provision assures a more wholehearted cooperation on the part of the public since it makes the entire setup elastic and subject to local changes, when indicated, without disturbing the other functioning units.

Before a prepayment nonprofit plan can function without paying the same tax as old line insurance companies, it will be necessary for the medical profession to underwrite the same. This means that the participating doctor will agree to accept a reduction in his fee should the funds not be sufficient to pay the subscriber the amount provided in his policy. It is planned further to pay only those physicians who have agreed to be participating members, and since there will be occasions when patients from one area will desire to consult physicians and possibly enter hospitals in another area, I would suggest that every doctor sign up as a participating member. In doing this, no additional responsibility will be assumed but the entire state program will be simplified and will offer the subscriber a wide choice of physicians and hospitals.

The need for a prepayment medical plan whereby the people of our state can be protected in the event of serious illness is now recognized by both our profession and the laity. It remains for the details to be worked out by each local unit. However, it should be borne in mind that no plan can function successfully without full cooperation on the part of the physicians. In this connection, it is well for the component medical societies to prepare in advance to eliminate the chiseling and dishonest doctor from any and all participation in the plan. Unfortunately, we must admit that there are some of our members of our profession who are rightfully accused of unethical conduct, but it must also be remembered that our humane work makes us more vulnerable than members of other groups. Therefore, being much in the public eye, we frequently receive the condemnation of our fellow citizens upon the slightest provocation.

There are numerous complaints being registered by the general practitioners of our state because the proposed insurance plan fails to provide for home visits. The Fact Finding and Planning Committee gave this question careful thought and study. However, a survey of existing similar plans revealed the interesting fact that there are no actuarial figures to justify this coverage; in fact, the old line insurance companies realize the futility of attempting such coverage because of the many hazards incident thereto. No one can deny the fact that families who are protected against serious illness will have more money with which to pay the family doctor for home visits. Besides, most of the hospitals in our state are open to the local doctors who are willing to adhere to the hospital rules.

I think you will agree that the medical profession is on trial today. Primarily, this is because of the increased cost of medical care, which is due, in part, to the increase in the cost of medical education, the necessity for purchasing diagnostic equipment and employing trained technicians for office work, and to the ever growing demand for highly trained specialists in all fields of medicine. All these things have had a tendency to commercialize the practice of medicine. As a result, we have to some extent lost our original concept of the practice of our profession and have more and more been willing to substitute the dollar mark for a service stripe.

If we desire to continue to practice medicine in the American way, then we must have individual and concerted action in the campaign to defeat Senate Bill No. 1161. To accomplish this worthwhile feat (a protection to both our profession and the public), we must recognize the importance of rendering a superior service to our patients **at a cost commensurate with their ability to pay.** At the same time, we must be willing to take time to acquaint our friends and patients with the evils of this legislation, particularly with reference to the provisions affecting the practice of medicine. We can no longer attempt to appease the occasional disgruntled doctor who, for selfish reasons would destroy every progressive move that offers protection both to him and to his patients.

It is my sincere hope that we will have no obstructionists among us, but rather that we can muster every physician under the banner of progress and service. To this end may I urge upon you the importance of working with and supporting your local medical society in its efforts to safeguard the American way of life.

President.

West Virginia Medical Journal

Official Journal of
The West Virginia State Medical Association
302 Atlas Bldg., Charleston, West Va.

Editor

Walter E. Vest, M. D. ..... Huntington

Associate Editors

Edward J. Van Liere, M. D. ..... Morgantown
W. M. Sheppe, M. D. ..... Wheeling
J. C. Hutchinson, M. D. ..... Welch
G. G. Irwin, M. D. ..... Charleston

Editor Emeritus

James R. Bloss, M. D. ..... Huntington

Business Manager

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Published monthly on the first day of the month, at Charleston, by The West Virginia State Medical Association.

Original articles are accepted on condition that they are contributed exclusively to the Journal.

Advertising rates furnished upon request. All advertisements must conform to the standard established by the Council of Pharmacy and Chemistry of the American Medical Association.

Address all communications to Business Manager, West Virginia Medical Journal, Box 1031, Charleston, West Va. Phone, Capitol 34-625.

SUBSCRIPTION $3.50 PER YEAR

Entered as second-class matter, January 1, 1926. Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917. Authorized July 24, 1919.

CONTINUING EDUCATION

With the return of the men of our armed services to civilian life after the war, we of the medical profession in West Virginia will be faced with diagnostic problems unlike those we have known in the past. The same may be said also of our public health and preventive measures. We shall be asked to cope with diseases due to parasites from the Arctic regions as well as from the tropics and all parts of the world. Already it is being impressed upon us that malaria to an even greater extent than syphilis is the great imitator and that the diagnosis is more and more going to rest upon laboratory findings. When we come to the filarial diseases, schistosomiasis, amebic and bacillary dysentery, leishmaniasis, and various forms of typhus fever, our problems are indeed going to be complex. Medical writers are advising those of us on the home front to familiarize ourselves with these hitherto unfamiliar diseases. Fortunately, our homecoming soldiers will include in their number many well trained physicians who will doubtless prove of great value because of their experiences during the war.

While it goes without saying that the medical profession must become familiar with these diseases, the fact that in most cases the diagnosis rests upon laboratory findings seems not to have been given its full implication. In this state a great many of our laboratories are operated by technicians. During the past several years the qualifications of technicians have risen to a very gratifying degree of proficiency. However, the introduction of so many new and hitherto alien diseases is going to present diagnostic problems which, it is feared, will lie outside the training and experience of the average technician. It would seem advisable at this time for our public health authorities to furnish refresher courses for technicians whereby they could be better instructed in helminthology and parasitology.

FREE ANTISYPHILITIC DRUGS

There are those of our members who can recall the uneasy resentment of the medical profession when veterans' hospitals were erected all over the country and veterans given free admission to these hospitals for any disability, service or nonservice connected. In the early thirties, under FERA, the Government assumed medical responsibility for the indigent. This was later succeeded by the now well-entrenched DPA. More recently we have had obstetrical relief for the wives of enlisted men in the armed forces. All of these projects were doubtless conceived with the best of intentions and, in part at least, have served their purpose in spite of the fact that in some cases their administrative offices have been used as rewards for the politically faithful and in other cases by the starry-eyed reformers as a means to an ulterior end. More lately the medical profession faces S. B. 1161, the Wagner-Murray Bill. It is hoped that all doctors are by now familiar with the provisions of that Bill.

The latest infiltration comes from our State Health Department Bureau of Venereal Diseases, which is headed by an officer of the

U. S. Public Health Service. We are now informed that, upon application, physicians may receive free drugs for the treatment of syphilis in their private practice. With the proposition that the state should protect itself by supplying drugs to treat the indigent or low income syphilitics, there can be no argument. That is the duty of the state. This has been done heretofore with the understanding that the physician obtaining such drugs would administer them without charge. The new arrangement is that the state will supply these drugs at the taxpayer's expense, and the doctor may use them at his own discretion even in cases where the patient is able to pay for them. It is to be wondered how any doctor can consistently object to state medicine and still avail himself of this offer.

EXISTENCE JUSTIFIED

The Fact Finding and Planning Committee has already justified its existence by evolving a medical service plan that has apparently met with the approval of both the medical profession and the hospital groups over the state.

When the Legislative Committee of the State Medical Association withdrew support of a bill sponsored at the last session of the legislature by the state insurance commissioner, it was felt that the differences among groups and the difficulties experienced in amending the bill to win popular support would prevent agreement even in principle at any time in the near future. At that time, the Council was divided on the question, and this fact alone prompted the members of the Legislative Committee to withdraw support of the bill.

Seeking a way to unify groups holding divergent views on the question of adequate medical care for the public, and having faith in the ability of our doctors and hospital groups to find a common meeting ground, Dr. R. J. Wilkinson, President of the Association, with the approval of the Council, appointed a Fact Finding and Planning Committee, and asked that the members explore the whole field of medical care and then recommend a solution of the vexing problem to the Council.

The organization meeting of the committee was held early in the spring, and at that time the work was mapped out for the immediate future. Now, seven months after the adjournment of the legislature *sine die*, the committee has succeeded in agreeing upon a plan that has been accepted and approved by the Council. A Central State Committee from the State Medical Association, and representatives of all the hospital plan groups in the state are now at work upon a basic contract that will be passed along as a model to the component medical societies.

The plan as outlined in the report to the Council has already been agreed to in principle by several of the societies, and when a contract has been worked out by the members of the committee, the door will be opened to participation of medical groups in every part of West Virginia.

Much praise is due the Fact Finding and Planning Committee for completing this part of its program so promptly. There are other important matters to be considered, and it is hoped that the members of the committee will approach them in the same business like and efficient manner which characterized their handling of the medical service plan problem in this state.

SNEAKING IN THE BACK DOOR

World War I was used as an excuse for saddling upon the American people a law that in itself did more to break down respect for law than any other piece of legislation ever passed by congress. From the time the National Prohibition Act became effective until its repeal, there was open rebellion against it in every state in the union.

Prohibition never did prohibit. It wasn't a question of "where can I get liquor?" but rather, "how much will it cost?" Bribery before that era in our history had been child's

play. Hijacking was unknown, and snoopers had never before been employed by the government. Thousands of citizens were jailed for having in their possession a small quantity of *spiritus frumenti*. Many were slain. Government agents were given a free hand, and in many places there was something that bordered on a virtual reign of anarchy.

Today, forces are again hard at work to rush a bill through congress before the boys come home. With between forty and fifty thousand doctors serving in the armed forces of our country, the advocates of the Wagner-Murray bill (S. 1161) have organized pressure groups to force action by congress at an early date. To them it makes no difference how the doctors away from home feel about the matter. They have not been, and will not be consulted. They are absent on a very important mission for the government, but this means nothing to those, who for reasons not yet made clear, would have the medical profession enslaved and shackled, and medicine as a free enterprise abolished overnight.

Considered in any light, the Wagner-Murray Bill is bad, bad for doctors and civilians alike. But, for the Wagnerites to strike at a time when thousands of doctors are serving with the armed forces in every part of the world, for them to capitalize upon the resulting shortage of doctors on the home front, and to sneak in the back door when those who remain at home are overworked to the point of exhaustion, is a demontsration of the means to which these bureaucrats will resort to socialize not only medicine but every business and profession in this country.

The result of this fight rests solely in the hands of our representatives in congress. They alone must decide the issue. We have faith in them, and we cannot believe that they will sell us down the river.

A physician may possess the science of Harvey * * * and yet there may be lacking in him those finer qualities of heart and head which count for so much in life.—Sir William Osler.

General News

ABSENT DOCTORS PROTECTED UNDER PROPOSED COUNCIL PLAN

A plan designed to alleviate the doctor shortage in certain areas in West Virginia and at the same time protect fully the rights and interests of the members of the profession who are now serving with our armed forces, has been submitted by the Council of the West Virginia State Medical Association to the Public Health Council. The plan was incorporated in a resolution and adopted after full discussion without a dissenting vote at the regular fall meeting held September 30 at Morris Memorial Hospital, Milton.

Besides Dr. R. O. Rogers, Chairman, the following members of the Council were present: Dr. R. J. Wilkinson, President, Huntington; Drs. R. K. Buford and Andrew E. Amick, Charleston; Guy H. Michael, Parsons; Frank J. Holroyd, Princeton; J. C. Peck, Moundsville; George W. Easley, Williamson; Raymond M. Sloan, Huntington; Cecil O. Post, Clarksburg; James L. Wade, Parkersburg; Carl E. Johnson, Morgantown; T. M. Barber, Treasurer, Charleston; and Mr. Charles Lively, secretary ex officio. The meeting was also attended by the following: Drs. R. M. Bobbitt, Chairman of the Fact Finding and Planning Committee; J. E. Offner, State Health Commissioner; T. G. Reed and Harry G. Steele, Vice Presidents elect; Frank V. Langfitt, Thomas L. Harris, and D. A. MacGregor, members of the Fact Finding and Planning Committee; E. A. Trinkle and W. C. Swann, Councillors elect; and W. E. Vest, Editor of the West Virginia Medical Journal.

For several months, the "pool" of relief doctors in this state has been exhausted. Heretofore, there have always been a few doctors who held themselves in readiness to respond to requests for assistance from other doctors located in the industrial areas of the state. These doctors are now engaged in practice requiring their fulltime service until our doctors return from war.

Interns and residents who would ordinarily locate in the state for the practice of their profession at the termination of their service in hospitals, have reserve commissions in the army or navy and are being called regularly to active duty. There have been but few relocations, especially on the part of doctors residing outside the state.

Under regulations promulgated by the Public Health Council, graduates of unrecognized schools (including alien and refugee physicians) are permitted to practice in approved hospitals under temporary permits granted for the purpose. A few such doctors are now attached to hospitals in the state. These men are not now permitted to practice outside hospitals. Under our medical practice act they can never be licensed to practice in this state.

The doctor shortage in certain industrial areas has at times been acute, and no relief is in sight from the field of regularly qualified doctors who can be licensed in this state either by examination or by reciprocity.

Viewing the matter from every angle, the members of the Council felt that it is either a question of throwing down the bars to the United States Public Health Service and having the Public Health Council invite the Surgeon General to send in doctors in uniform, or requesting the Public Health Council to grant to graduates of unrecognized schools temporary permits (not licenses) to practice from one meeting of the Council to another.

With a view to terminating the right of any of these physicians to practice in this state after the return of our doctors from military service, the Council specifically recommended that all permits be revoked within six months after the war ends.

The resolution adopted by the Council and certified to the members of the Public Health Council is as follows:

"WHEREAS, in the present situation of total war, there is an insufficient number of physicians in several communities in West Virginia, especially in industrial areas, to provide the civilian population with adequate or necessary medical service; and,

"WHEREAS, it appears that there are about 6,000 graduates of schools not recognized by our standards for permanent licensure who are available for service in this country; and

"WHEREAS, the Council of the West Virginia State Medical Association, appreciating fully the excellent standards for medical licensure set by the Public Health Council and at present maintained in this state, does not desire to have these standards lowered for permanent licensure in any manner whatsoever;

"*Resolved, Therefore,* that the Council of the West Virginia State Medical Association recommends to the Public Health Council that it grant temporary permits from one meeting to its next succeeding meeting to such graduates of unrecognized schools as may be necessary to supply areas in which there might exist an acute shortage of doctors, such permits to be issued on condition,

"(1) That actual local need be demonstrated to the complete satisfaction of the Public Health Council;

"(2) That such graduates of an unrecognized school be given a permit to practice only as an assistant to some individual licensed physician, who shall be his sponsor and who shall be responsible for all professional acts of such a graduate;

"(3) That he demonstrate to the satisfaction of the Public Health Council his knowledge of all branches of medicine and surgery, and proficiency in the use of the English language;

"(4) That such applicant for a temporary permit to practice agree to follow and abide by such restrictions and regulations as the Public Health Council sees proper to impose; and

"(5) That in no case whatsoever shall such permit to practice be granted or renewed for a period in excess of six months after the cessation of hostilities."

Planning Committee Report Approved

The report of the Fact Finding and Planning Committee, submitted by Dr. Ray M. Bobbitt, of Huntington, Chairman, was accepted and approved unanimously, and the executive secretary was directed to have the same mimeographed and mailed to all the members of the State Medical Association. The report is printed in full beginning on page 391.

The Executive Secretary was requested to leave the room and, upon his return, Dr. R. O. Rogers, Chairman, announced that the Council had unanimously authorized an increase of $100 per month in the salary of the Executive Secretary.

The appropriation of $500 to the Woman's Auxiliary heretofore authorized individually by the members of the Council was formally ratified. The funds will be used primarily in the educational campaign which will get under way by early winter.

Shortage in Nurses

The following resolution, introduced by Dr. James L. Wade, of Parkersburg, was unanimously adopted:

"WHEREAS, there is a definite and acute shortage of nurses and nursing personnel in the state of West Virginia; and

"WHEREAS, it is felt that the citizens of the state should be informed of such an acute shortage;

"*Be It Resolved,* that the Council of the West Virginia State Medical Association approve a program of educational publicity to eliminate the unnecessary use of nurses and nursing personnel, such

a program to be carried out in cooperation with the West Virginia State Medical Association; and,

"*Be It Further Resolved*, that such a program of educational publicity be recommended for component medical societies in areas where a shortage of nurses exists, should the same be considered necessary and deisrable by the West Virginia State Nurses Association."

Dr. Hutchinson Reelected

Dr. J. C. Hutchinson of Welch was reelected a member of the Publication Committee for the five-year term ending December 31, 1948. He has served as a member of the committee since 1941, at which time he was appointed to succeed Dr. Frederick R. Whittlesey, of Morgantown, resigned.

Dr. J. E. Offner, State Health Commissioner, was presented to the Council and in a short talk pledged his support in the important work that is now being undertaken with reference to improved medical care for the people of West Virginia.

Annual Meeting at Wheeling

Wheeling was selected for the 1944 meeting of the Association and the President elect and Executive Secretary were directed to choose the dates for such meeting. (Subsequently the meeting was fixed for May 15-16.) Invitations for the meeting were extended to the House of Delegates last May by both the Ohio County and Cabell County Medical Societies.

GRADUATES IN AVIATION MEDICINE

Three more West Virginia doctors have completed the course for aviation medical examiners, the didactic portion of which was conducted at the School for Aviation Medicine, Randolph Field, Texas. According to the Journal of the American Medical Association, the following doctors were members of the graduating class at exercises held August 26, at Randolph Field: Lt. James E. McClung, Richwood; Lt. Robert A. McLane, Jr., Arthurdale; and Lt. Richard N. O'Dell, Belle.

RELOCATIONS

Dr. Everett Walker, who has been located at Barboursville for several months, has returned to Adrian.

Dr. Sid C. O'Dell, formerly of Switchback, McDowell County, has moved to Dante, Virginia.

Dr. Clarence F. Ward, of Berwind, who moved to Portsmouth, Virginia, early in 1943, has located at Rockford, Ohio.

MEDICAL SERVICE FOR ENTIRE STATE PROPOSED BY PLANNING COMMITTEE

The second meeting of the Fact Finding and Planning Committee of the West Virginia State Medical Association ended with the members present in full agreement on a plan to provide some form of prepaid medical service in all parts of West Virginia. The meeting was held September 29 at Huntington on the eve of the regular fall meeting of the council at Milton.

In a report prepared for submission to the Council, the members of the committee recommended that regional non-profit medical service plans be developed as community projects. These plans are to be sponsored by component societies and administered by local group hospital service organizations, under the supervision of a central state committee and advisory committees from component medical societies.

PLANNING COMMITTEE ASKS FOR SUGGESTIONS

All members of the West Virginia State Medical Association are requested to submit to the Fact Finding and Planning Committee any suggestions that they may wish to make with reference to the several matters in which the medical profession is interested. All suggestions will be taken up for consideration at a future meeting. Communications should be addressed to Dr. Ray M. Bobbitt, Chairman, 1139 Fourth Avenue, Huntington, West Virginia.

The report embodying the plan agreed upon was prepared by the Chairman, Dr. Ray M. Bobbitt, of Huntington, and submitted to the Council at a meeting on September 30 at the Morris Memorial Hospital, Milton. The Council accepted and unanimously approved the report which has been mimeographed and mailed to all the members of the Association, together with a letter from Dr. R. J. Wilkinson, President.

The full report of the committee is as follows:

"Realizing that the cost of medical care has advanced markedly during the past few years, so much so that for the average wage earner a serious illness becomes a financial catastrophe, and although realizing this increased cost is not chargeable to the physician, but is due to increased cost of hospitalization and diagnostic procedure necessary to give the patient adequate medical care, and further realizing that the cost can only be met by a distribution in some form of prepaid medical service, the Fact Finding and Planning Committee makes the following recommendations:

"1. That regional non-profit medical service plans be developed immediately as community projects with the endorsement and support of component medical societies; that the plans be operated by group hospital service with the joint supervision of an advisory committee elected by the county medical society and a central state committee appointed by the president of the State Medical Association; that a medical service contract be offered to the public on a periodic prepayment plan to pay the cost, in whole or in part, of surgical, obstetrical and medical service, while a bona fide patient in a hospital; that the details of these plans and contracts be left to each community; that nothing be done that might in the least interfere with doctor-patient relationship; and, that the patient have the free choice of hospital and doctor.

"It will be the duty of the state committee, together with the committee representing hospital plans operating within the state, to formulate a basic contract, and particularly to see that this service is made available to every community of the state, with particular emphasis on rural areas.

"2. That inasmuch as the care of the indigent sick is a joint responsibility of the community and the medical profession, further study should be made in each community toward improving such care if necessary. The committee recommends that each county society, through a committee, be asked to survey its plan for the care of the indigent sick, and to send a report with their recommendations to the Fact Finding and Planning Committee, so that the committee will be in a better position to offer proper recommendations with reference to the improvement of this service.

"3. Realizing that the health of the community depends largely on adequate public health departments, the committee recommends that the public health work be extended and that measures be taken to assure adequate public health units for every county or group of counties. The committee believes that as far as possible the work of these units should be limited to preventive medicine, immunization, and particularly to education of the public in health matters.

"The committee wishes to commend the Legislature for passing legislation on cancer control, and placing institutions for the treatment of tuberculosis in the hands of medical administrators.

"4. The committee wishes to endorse the project of the Woman's Auxiliary for a proposed educational campaign. It feels, however, that the campaign must be planned most carefully and that the medical advisory committee should work closely with the Auxiliary in perparing the material for this work."

Central State Committee

The Central State Committee, appointed after approval of the report by the Council, is composed of Dr. Ray M. Bobbitt, Huntington, Chairman; Dr. D. A. MacGregor, of Wheeling; and Dr. R. O. Rogers, of Bluefield.

The members of this committee are now collaborating with a committee from the hospital groups in the preparation of a basic contract that can be used as a model by the various societies over the state. The contract will, if necessary, be amended by the local groups to meet local needs.

The Fact Finding and Planning Committee is composed of Dr. Ray M. Bobbitt, Huntington, Chairman; and Drs. D. A. MacGregor, John P. Helmick, Frank V. Langfitt, Carl E. Johnson, Frank J. Holroyd, Hu C. Myers, G. O. Martin, George F. Grisinger, and Thomas L. Harris.

1944 MEETING AT WHEELING

The 77th annual meeting of the West Virginia State Medical Association will be held at Wheeling, Monday and Tuesday, May 15-16, 1944. The dates, which correspond with the 1943 meeting at Charleston in that they fall on the Monday and Tuesday of the same week, were fixed at a conference held in Wheeling early in October.

The Windsor and McLure have been designated as convention hotels. Headquarters will be established at the Windsor, where all scientific sessions will be held. Scientific and technical exhibits will be set up on the mezzanine, in the lobby, and in the clubroom adjoining the auditorium.

The Scientific Work Committee will meet early in November to begin formulating the program. Full scientific sessions will be presented during the two-day meeting. The committee is composed of Dr. R. D. Gill, Wheeling, Chairman, and Drs. Thomas L. Harris, of Parkersburg, and J. P. McMullen, of Wellsburg.

The committee on scientific exhibits and the local committee on arrangements will be named by the president elect, Dr. Robert J. Reed, Jr. The last meeting of the Association at Wheeling was held in 1935.

THE AMERICAN THERAPEUTIC SOCIETY

The forty-fourth annual meeting of the American Therapeutic Society will be held at the Netherland Plaza Hotel, Cincinnati, Ohio. All physicians are invited to attend the scientific sessions which will be limited to one day, Monday, November 15.

ASHFORD GENERAL HOSPITAL DEDICATED

Dedication ceremonies for Ashford General Hospital at White Sulphur Springs were held October 16. At this time, the world famous Greenbrier Hotel formally passed into the hands of the United States Government.

Following its purchase in the summer of 1942, the hotel was converted into an Army hospital and the finest of medical and surgical equipment installed. Hundreds of casualties from the battle fields of the world have already been treated at the hospital. The famous spa, baths, swimming pool, and other recreational facilities which have been used for over a century by patrons of the Greenbrier have already helped rehabilitate many sick and wounded veterans.

The cost of converting the hotel into a modern hospital exceeded a million dollars. Special facilities for x-ray laboratories and orthopedic and genito-urinary surgery were installed, and a suite of eight complete operating rooms and a central surgical supply room constructed.

There are 39 wards with bed capacities ranging from 30 to 60 beds. The Ashford is a 2000-bed Army hospital.

Col. Clyde M. Beck, M. C., AUS, formerly of Memphis, Tennessee, is commanding officer of the hospital. His staff consists of 45 medical officers, 70 nurses, 400 enlisted men, and more than 480 civilian employees. One West Virginia doctor, Lt. Geo. R. Clark, of Wheeling, is attached to the orthopedic section, and Capt. John Rohrbough, dentist, of Clarksburg, is in the dental unit.

Hundreds of people from all over West Virginia attended the dedication exercises. Doctors present were given an opportunity to tour every section of the hospital. Prominent guests, included Maj. General Norman H. Kirk, Surgeon General of the Army; Brigadier General Fred W. Rankin, M. C., chief consultant in surgery for the U. S. Army; Col. Sam F. Seeley, M. C., formerly executive officer of the central office of the Procurement and Assignment division, and executive officer of Ashford General Hospital when first opened; and Brigadier General Robert H. Mills, chief of the Dental Corps, U. S. Army. Major General John L. Hines, of Lewisburg, former chief of staff of the Army, was also present.

One of the nests of tuberculosis which remains in our population is represented by older men, particularly homeless indigents.—Mary Dempsey, N.T.A.

A.P.O. AND FLEET P.O. NUMBERS FOR W. VA. MEMBERS IN SERVICE

Several requests have been received at the headquarters offices of the West Virginia State Medical Association for the addresses of members who are stationed overseas. Under the Code of Wartime Practices, issued by Byron Price, Director of the Office of Censorship, Washington, unit identifications cannot be printed in connection with addresses of doctors outside the United States, but full addresses may be used so long as doctors remain in training in this country.

The following War Department A. P. O. numbers and Navy fleet post office designations should be used in addressing mail to the following members of the Association in service outside the continental United States:

Captain John P. Brick, M. C.
A. P. O. 827,
% Postmaster, New Orleans, La.

Lt. Comdr. James R. Brown, (MC), USNR
% Fleet Post Office,
San Francisco, Calif.

Major C. I. Butte, Jr., M. C.
A. P. O. 4777,
% Postmaster, New York, N. Y.

Capt. Harry E. Baldock, M. C.
A. P. O. 783,
% Postmaster, New York, N. Y.

Capt. O. D. Ballard, M. C.
A. P. O. 4757,
% Postmaster, San Francisco, Calif.

Capt. Spencer L. Bivens, M. C.
A. P. O. 29,
% Postmaster, New York City.

Major M. H. Bertling, M. C.
A. P. O. 181,
% Postmaster, Los Angeles, Calif.

Lt. D. T. Bond, M. C.
A. P. O. 37,
% Postmaster, San Francisco, Calif.

Lt. George M. Caldwell, (MC) USNR
% Fleet Post Office,
New York, N. Y.

Capt. C. C. Carson, M. C.
A. P. O. 4849,
% Postmaster, New York, N. Y.

Lt. E. Norval Carter, M. C.
A. P. O. 635,
% Postmaster, New York, N. Y.

Major A. C. Chandler, M. C.
A. P. O. 4669,
% Postmaster, New York, N. Y.

Capt. P. C. Chenoweth, M. C.
A. P. O. 4768,
% Postmaster, New York, N. Y.

Capt. John Charles Condry, M. C.
A. P. O. 929,
% Postmaster, New York, N. Y.

Major H. A. Conrad, M. C.
A. P. O. 937,
% Postmaster, San Francisco, Calif.

Lt. Rank O. Dawson, (MC), USNR
% Fleet Post Office,
New York, N. Y.

Capt. E. Newton DuPuy, M. C.
A. P. O. 302,
% Postmaster, New York, N. Y.

Lt. Leonard M. Eckmann, M. C.
A. P. O. 259,
% Postmaster, Los Angeles, Calif.

Major Goerge F. Evans, M. C.
A. P. O. 512,
% Postmaster, New York, N. Y.

Lt. R. M. Ferrell, M. C.
A. P. O. 306,
% Postmaster, New York, N. Y.

Col. Charles F. Fisher, M. C.
A. P. O. 4778,
% Postmaster, New York, N. Y.

Major J. C. Ford, M. C.
A. P. O. 827,
% Postmaster, New Orleans, La.

Capt. Norman Friedman, M. C.
A. P. O. 37,
% Postmaster, San Francisco, Calif.

Lt. Comdr. E. Lyle Gage, (MC), USNR
Fleet Post Office 157
New York, N. Y.

Capt. J. C. Gaskel, M. C.
A. P. O. 763,
% Postmaster, New York, N. Y.

Lt. Col. E. O. Gates, M. C.
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Obituaries

CHESTER ARTHUR FLEGER, M. D.

Dr. Chester Arthur Fleger, of Ansted, member of the Fayette County Medical Society and the West Virginia State Medical Association, died at his home on July 22. He was born at Montgomery, West Virginia, August 26, 1881.

Doctor Fleger graduated from Fayette Normal School and taught in Nicholas County schools for two years. He then began the study of medicine at Maryland Medical College, from which he was graduated in 1905. He first practiced at Summersville, West Virginia, where he remained for eight years. He moved to Seth in 1913, where he practiced for more than twenty years. He had been located at Ansted for about eight years prior to his death. Fraternally, he was a thirty-second degree Mason. He is survived by his widow, Emma Umbarger Fleger; a son, Robert Arthur, of Louisville, Kentucky; and a daughter, Mrs. Harry Vorn, of Charleston.

RALPH HOGSHEAD, M. D.

Dr. Ralph Hogshead was born April 13, 1889, at Second Creek, Monroe County, West Virginia. He attended Marshall College, Huntington, and Valparaiso University, Indiana. After teaching for six years in the schools of West Virginia, he entered medical school at Valparaiso University where he studied medicine for two years. He received his M. D. degree in 1918 from Loyola University School of Medicine, Chicago, and was licensed to practice in West Virginia the same year. He served in the Enlisted Medical Reserve Corps from 1917 until the close of World War I, after which he interned at McKendree Emergency Hospital, McKendree, West Virginia.

Dr. Hogshead first located at Eagle, West Virginia, but moved to Carbondale in 1921, where he served as physician for the Kanawha & Hocking Coal & Coke Company until 1932, when he moved to Montgomery, where he engaged in private practice. In 1941 he moved to Mammoth where he again engaged in practice as a physician for the Kanawha & Hocking Coal & Coke Company.

Dr. Hogshead has served as secretary of the Fayette County Medical Society and as Councillor of the West Virginia State Medical Association from the Sixth District. He was a member of the American Legion Post No. 58, Montgomery, Loyal Order of Moose, Royal Arch Masons and Shrine.

He died October 9th in the Charleston General Hospital following a long illness. Funeral services were held in Montgomery, with interment in Green Hill Cemetery at Union, Monroe County. He is survived by his widow, Norma Snodgrass Hogshead; two sons, Ralph, Jr., a senior at Temple University School of Medicine, and George William, a junior at the same school; and one daughter, Ida May, who is a senior at East Bank High School.

WEST VIRGINIA DELEGATION IN CONGRESS

Requests are still being received each day from members of the State Medical Association for the names and addresses of West Virginia's representatives in Congress, to whom communications may be mailed concerning the Wagner-Murray bill to amend the Social Security Act.

The West Virginia delegation is composed of United States Senators Harley M. Kilgore (Beckley) and W. Chapman Revercomb (Charleston), and the following members of the House of Representatives: First District, A. C. Schiffler (Wheeling); Second District, Jennings Randolph (Elkins); Third District, Edward G. Rohrbough (Glenville); Fourth District, Hubert S. Ellis (Huntington); Fifth District, John Kee (Bluefield); and Sixth District, Joe L. Smith (Beckley).

The United States Senators should be addressed care Senate Office Building, and the Congressmen care House Office Building, Washington.

VENEREAL DISEASES MEDICAL CENTER

A United States Public Health Service medical center for the treatment of venereal diseases will be opened at South Charleston, West Virginia, late in November. The center will accommodate 350 patients and will be set up in the abandoned N. Y. A. training center in that city. A medical clinic with 35 beds will be attached and facilities for a limited amount of occupational training will be provided.

Dr. J. E. Offner, State Health Commissioner, is authority for the statement that the so-called "fast treatment" will be used, consisting of a maximum hospitalization of 30 days for syphilis and 15 days for gonorrhea.

Under the provisions of an act passed at the 1943 session of the West Virginia legislature, local health officers are authorized to commit to the institution persons who refuse to submit to treatment in their local communities, but admission will also be authorized upon a voluntary basis.

WITH DOCTORS IN THE SERVICE

Capt. John C. Condry, of Charleston, and Capt. O. D. Ballard, of Van, have been assigned to overseas duty. Captain Condry has been stationed at Camp Forrest, Tennessee, and Capt. Ballard at Winter Garden, Florida.

* * * *

Late in August, Capt. Lewell S. King of Philippi, who has been stationed in Iran since the fall of 1942, was promoted to the rank of Major. At the present time he is serving as chief of surgery in an outfit that is functioning as a tent hospital in an isolated mountain area of that country. However, he writes that a hospital is now being built and will soon be ready for occupancy. Speaking of Captain Harry E. Baldock, of Charleston, who is chief of medical service at the same hospital, he says, "he is one of the best liked and most valuable men in the group." He says that some enlisted men from West Virginia are connected with the hospital. "Since we are not in a combat area," he continued, "surgical admissions are fewer than medical. The medical men are kept busy with malaria and dysenteries."

* * * *

Lt. (jg) Edward H. Boggs (MC), USNR, formerly of Chester, who has been with the Marines for six months in the South Pacific area, is now attached to the U. S. Naval Hospital, Treasure Island, San Francisco.

Dr. L. B. Mathews, of Charleston, who has been stationed at Duncan Field, San Antonio, Texas, has been promoted to the rank of Captain. He is now on active duty overseas.

* * * *

Capt. John W. Nash and Major A. C. Chandler, both of Charleston, are now located in India with the same hospital group. En route Dr. Hash was chief of medical service of the ship's hospital. He was given a pass ashore at a certain port of call to obtain some medical supplies for the ship's stores. Upon returning to the dock, laden with parcels, Captain Hash found that the ship had started moving off. Very fortunately, he succeeded in hailing an officer aboard the ship, and after some maneuvering, was taken aboard in the cargo net with his medical supplies.

* * * *

Lt. Wm. H. Riheldaffer, of Romney, Captain H. L. Hegner, of Wellsburg, and Captain Thomas B. Gordon, of New Martinsville, are with the armed forces somewhere in the South Pacific.

* * * *

Major L. B. Ayers, of Beckley, who has been stationed at Morris Field, N. C., is now in special training on the west coast.

* * * *

Captain C. C. Carson, of Gassaway, who has been attached to the station hospital at Fort Jackson, S. C., is now on overseas duty.

Capt. John W. Hash, M.C. of Charleston, attached to a Station Hospital in India.

Major Lewell S. King, M.C., of Philippi, Chief of Surgery at a Station Hospital in Iran.

Lt. Col. Edmund O. Gates, M.C., of Welch, commanding officer of a Station Hospital overseas.

Capt. Robt. M. Lamb, M.C., of Winona, attached to a Station Hospital at Daniel Field, Augusta, Georgia.

Captain Harry E. Baldock, of Charleston, who is chief of medical service at a field hospital in Iran, writes that he receives the Journal regularly each month. "I read it from cover to cover, and am deeply interested in all the activities of the association," he says. He states that his work is all medical and that he has enough to keep him interested. "While our entire organization is very happily situated," he continues, "we are hoping that the war will end in another year so that we may rejoin our families and resume practice back home. In the meantime, be sure to give my very best regards to the members of the Association and again accept my thanks for the Journal."

* * * *

Major L. H. Armentrout, of Welch, is now attached to the staff at Stark General Hospital, Charleston, S. C.

* * * *

Capt. John W. Walters, of Wheeling, is a member of the staff of the station hospital at Camp Van Dorn, Mississippi.

* * * *

Dr. Howard A. Swart, orthopedic surgeon, of Charleston, has been commissioned a major in the Army Medical Corps and has reported for duty at Carlisle Barracks, Penna.

* * * *

Capt. Joseph T. Peters, of South Charleston, who has been stationed at Fort Thomas, Kentucky, is now on duty overseas.

* * * *

Lt. Comdr. W. A. Thornhill, Jr., of Charleston, who has been on duty with the Navy in Brazil for over a year, is now attached to the staff of the U. S. Naval Hospital, at Newport, R. I.

* * * *

The wife and children of Dr. Spencer L. Bivens have returned to their home in Charleston, after spending some time on the west coast. Capt. Bivens had been located in Santa Barbara before going to England in the summer of 1942, where he is still in active service with the armed forces.

* * * *

Dr. C. B. Buffington, orthopedic surgeon of the Wheeling Clinic, is attached to a base hospital in North Africa.

* * * *

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County Society News

BOONE COUNTY

Dr. H. H. Howell, of Madison, delivered an interesting address on "Cardiac Arrhythmias and Murmurs" at the regular monthly meeting of the Boone County Medical Society, held at the County Health Offices at Madison, September 22, 1943. Phonographic recordings were used in connection with the address, which was followed by a round table discussion of the subject.

A. C. LEWIS, M. D., *Secretary.*

CABELL COUNTY

Dr. Walter G. Putschar, of Charleston, was the guest speaker at the regular monthly meeting of the Cabell County Medical Society held at the Prichard Hotel, Huntington, Thursday evening, October 14, 1943. He spoke on the subject of "Pathology of the Intervertebral Disc."

Following the scientific session, the annual election of officers was held. Dr. Carl Kappes was elected president, and Dr. R. Stuart Van Metre, vice president. Drs. Cole D. Genge and Ivan R. Harwood, were reelected secretary and treasurer, respectively. Dr. J. F. Barker was elected member of the Board of Censors, and the following were elected as delegates to the 1944 meeting: Drs. C. B. Wright, W. F. Beckner, and Raymond Sloan. Drs. J. L. Hutchinson and Gilbert A. Ratcliff were reelected alternates.

The report of the State Medical Association's Fact Finding and Planning Committee was accepted and approved in principle, and the president was authorized to appoint an advisory committee to cooperate with the Central State Committee in the operation of medical service plans.

COLE D. GENGE, M. D., *Secretary.*

GREENBRIER VALLEY

Major Marsh H. McCall, chief of the general medical section at Ashford General Hospital, White Sulphur Springs, was the guest speaker at the first fall meeting of the Greenbrier Valley Medical Society, held August 25, 1943, at the Lewisburg Community House. He spoke on the incidence of gastric ulcer among service men, presenting several

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Auxiliary to succeed Mrs. F. S. Harkelroad, resigned. All future meetings of the society will be held in the homes of members at 2:00, P. M., on the third Monday of each month. At the October meeting, Mrs. S. A. Ford, president elect of the State Auxiliary, will outline the program for the ensuing year.

* * * *

Mrs. Scott A. Ford, President elect of the Woman's Auxiliary to the West Virginia State Medical Association was the guest speaker at the regular monthly meeting of the Raleigh County Auxiliary, held October 18, 1943, at the home of Mrs. W. C. Covey, Beckley.

Mrs. Ford reported in detail concerning the meeting of the special committee from the Executive Board at Huntington, September 29, in connection with the proposed educational campaign which will be sponsored by the Auxiliary.

MRS. J. M. CORAM, *Secretary.*

OB. AND G. BOARD EXAMINATIONS

The next written examination and review of case histories (Part I) for candidates will be held in various cities of the United States and Canada and by special arrangements at Army and Navy Stations on Saturday, February 12, 1944 at 2:00 P.M. Candidates who successfully complete the Part I examination proceed automatically to the Part II examination held later in the year. All applications for this year's examinations must be in the office of the Secretary by November 15, 1943.

The Office of the Surgeon General (U. S. Army) has issued instructions that men in Service, eligible for Board examinations, be encouraged to apply and that they may be ordered to Detached Duty for the purpose of taking these examinations whenever possible. The Office of the Surgeon General of the U. S. Navy presumably takes a similar attitude on this matter.

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TUBERCULOSIS ABSTRACTS

(Continued from page 385)

up the exposure and shuts off the machine when the dose decided on has been given, is advisable.

Some fluoroscopic examinations require an exposure of 5 minutes. With an intensity of 20 r at the patient's skin, this means a dose of 100 roentgens. A dose of 75 r is often used for treatments of skin diseases and the title of a publication in *The Journal of Radiology*, "Roentgen Therapy in Fluoroscopy" is, therefore, no exaggeration.

The rules laid down here for the safety of the patient may seem drastic. They are, however, not difficult to follow after they once have been accepted and certainly patients have the right to expect the physician to take the necessary precautions in order to avoid serious injury from a simple examination. These rules also help to protect the examiner, though any injury to him is due to accumulation of exposure over a long time rather than to a single dose. He must be particularly careful to protect the hands which are inevitably exposed at palpation during the fluoroscopic examination. The use of lead-rubber gloves may help but not unless the gloves are heavy and designed to shield the whole hand can they be relied upon to give complete protection. Light gloves may give a false sense of security. The examiner must in any case be aware of the danger and take all precautions possible.

The most dangerous procedure and the one which has caused most of the injuries is the setting of fracture under fluoroscopic visualization. This practice must be condemned and the radiologist in charge should enforce the rule that nobody on the staff be permitted to use the apparatus in this manner. The doctor may receive enough exposure from the setting of a single fracture to produce a severe skin reaction. It is, of course, good practice to inspect the position fluoroscopically and that can be done several times without exceeding the permissible total dose.

A number of physicians already have suffered the consequences of too much exposure during fluoroscopy. They have been severely handicapped and some have paid with their lives. The tragedy has been extremely impressive, and it is hoped that others will heed the warnings before it is too late.

Danger from Fluoroscopy, K. Wilhelm Stenstrom, Ph.D., Professor of Biophysics, University of Minnesota, Editorial, Minnesota Medicine, June, 1943.

THE WEST VIRGINIA MEDICAL JOURNAL

ATLAS BUILDING. CHARLESTON. W. VA.

The Committee on Publication is not responsible for the authenticity of opinion or statements made by authors or in communications submitted to this Journal for publication. The author or communicant shall be held entirely responsible.

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ENTERED AS SECOND-CLASS MATTER, JANUARY 1, 1926, AT THE POST OFFICE AT CHARLESTON, WEST VIRGINIA

Vol. XXXIX December, 1943 No. 12

THE EFFECT OF ANOXIA ON THE BODY*

By E. J. VAN LIERE, M. D.
Morgantown, West Virginia

I DEEM it an honor to give the "Oration on Medicine" before the members of the West Virginia State Medical Association and its distinguished guests. As many of you know, I am not a clinician and cannot, therefore, give you the results of any clinical experience. What I propose to do, however, is to present some recent developments in the field of anoxia or oxygen want.

This subject is now a popular one and even the laymen have become interested in it, due, presumably, to the war and the considerable progress made in the development of aviation. Oxygen want, of course, is usually associated with high altitudes, but as you are aware, certain diseases of the blood, the circulation and the lungs may also cause this condition.

The field of anoxia is a vast one and I shall confine my remarks to the researches done in my own laboratory of the West Virginia University School of Medicine during the past eighteen or nineteen years. I am glad to have this opportunity because for the past few years our state medical association has taken a keen interest in a number of our problems. Indeed, at this point I would like to state that our able and efficient president, Dr. R. J. Wilkinson, has had more to do with originating and consummating our cooperative agreement with the Medical College of Virginia than has any other individual.

There is still another reason I should like to present some of our researches. It is this: If the citizenry of our state expects to receive the benefits of recent developments of medical research, this same citizenry should be willing to give reasonable financial aid to support a program in its own university, which makes medical research possible. In

THE AUTHOR

Dr. Van Liere, graduated Harvard Medical School; Ph. D., University of Chicago; Dean of Medical School and Professor of Physiology, West Virginia University; Fellow American College of Physicians; American Physiological Society.

*The Oration on Medicine, delivered before the seventy-sixth annual meeting, West Virginia State Medical Association, Charleston, May 17, 1943.

other words, the people of this state should be willing to do their share in this regard and not expect the citizens of other states to do it for them.

To return to my subject — anoxia — I should like to be intellectually honest with you and say that when my researches in anoxia were begun, it was without full realization that this field of research would prove to be such an important one. I have chosen to illustrate my paper with lantern slides.

TYPES OF ANOXIA

There are four types of anoxia recognized: (1) anoxic anoxia, (2) anemic anoxia, (3) stagnant anoxia and (4) histotoxic anoxia.

The first type, anoxic anoxia (or anoxemia) is a condition in which the tension of oxygen in the arterial blood is lower than normal; the hemoglobin is not fully saturated. This is the type which is produced by high altitudes and obviously the type of anoxia to which the aviator is subjected. It may also be produced by abnormal conditions in the lungs.

In anemic anoxia the oxygen tension in arterial blood is normal but the amount of functioning hemoglobin is too small. This condition is found following hemorrhage, or in pernicious anemia, or in any other condition in which red blood cells have been reduced in number. Carbon monoxide poisoning also produces anemic anoxia.

In the stagnant type of anoxia the arterial blood is normal in oxygen content, but it is supplied to the tissues in insufficient amounts. We find this type of anoxia when there is a stagnation of the blood, such as in cardiac failure. In grave conditions of cardiac failure the stagnant anoxia becomes so pronounced that there is an interference with the normal functions of the body.

The histotoxic type of anoxia is perhaps not as commonly found as are the other three types. In this condition the arterial blood contains plenty of oxygen, but the tissue cells are poisoned and are unable to make effective use of the oxygen supplied them. This type is best exemplified in cyanide poisoning. It is found to a much less degree during the administration of certain anesthetic agents.

THE EFFECT OF ANOXIA ON THE HEART

The effect of anoxia on the heart will first be considered. In 1917 Kaufmann and Meyer[1] observed that soldiers who had been campaigning in mountainous country frequently showed physical signs of cardiac dilatation, which persisted for a considerable length of time after they had returned to the lowlands. It was observed further that if digitalis were administered, the hearts of these soldiers returned to normal size more quickly. In 1925 Somervell[2] reported that on the Mt. Everest Expedition all the men who went above the 27,000 foot altitude returned with dilated hearts and that it took them from one to three weeks to recover.

It was shown in 1925 by the Japanese worker, Takeuchi,[3] in his experiments on cats, that anoxia is capable of producing cardiac dilatation. This was confirmed by Van Liere[4] in 1927 while working with dogs, and by others.[5 6]

Table 1 shows the effect of anoxic anoxia on cardiac size. It will be noted that the heart grows progressively larger as the anoxia becomes more severe. It will be noted also that digitalis aids in the prevention of cardiac dilatation produced by anoxia. Table 2 shows that digitalis plus double vagotomy is even more effective than digitalis alone in preventing cardiac dilatation produced by anoxia. It should be stated here that the administration of effective doses of atropine give approximately the same results as those obtained by cutting both vagi.

The interpretation of the data in these tables is that extreme degrees of anoxia are quite capable of producing cardiac dilatation and also, presumably, considerable vagospasm. Digitalis in effective dosage will, in a measure, prevent the cardiac dilatation produced by anoxia.

Digitalis probably acted directly on the cardiac musculature, so that the tone of the heart was increased and the contraction was more complete. Presumably, the cardiac

muscle fibers were capable of withstanding greater strain and so allowed less cardiac dilatation. The data in tables 1 and 2 suggest that it might prove beneficial to administer effective doses of digitalis as a prophylactic measure to certain patients who will be exposed to anoxic anoxia.

Now that the effect of acute anoxia on the heart has been discussed, it is of interest to consider briefly the effect of chronic anoxia. Table 3 shows the effect of continuous anoxia on the heart of the mammal. Fifteen guinea pigs were subjected to continuous anoxia for periods varying from twenty to one hundred and five days with oxygen percentages ranging from 12.25 to 10.5 per cent, corresponding to altitudes of approximately 14,000 to 18,000 feet. The table shows that the aver-

TABLE 1

THE EFFECT OF DIGITALIS ON ACUTE CARDIAC DILATATION PRODUCED BY ANOXEMIA.*

	REPRESENTATIVE ANIMAL		AVERAGE OF 23 ANIMALS	
	Cardiac Area	Changes in Terms of Normal	Cardiac Area	Changes in Terms of Normal
Control				
	Sq. In.	Per Cent	Sq. In.	Per Cent
Normal cardiac area	4.80	100.00	5.49	100.00
Anoxemia ¾ minute	4.60	95.83	5.60	102.00
Anoxemia 1 minute	5.25	109.38	6.00	109.29
Anoxemia 1¼ minutes	5.50	114.58	6.37	116.03
Anoxemia 1½ minutes	5.50	114.58	6.39	116.39
Digitalis				
Normal cardiac area	4.80	100.00	5.11	93.08
Anoxemia ¾ minute	4.30	89.58	5.14	93.62
Anoxemia 1 minute	4.50	93.75	5.47	99.64
Anoxemia 1¼ minutes	4.50	93.75	5.89	107.29
Anoxemia 1½ minutes	5.25	109.38	6.04	110.02

*From the J. Pharmacol. & Exp. Therap. 52, 408, 1934.

TABLE 2

THE EFFECT OF DIGITALIS PLUS DOUBLE VAGOTOMY DURING ANOXEMIA (Average of 16 Animals)*

	CONTROL		DIGITALIS PLUS DOUBLE VAGOTOMY	
	Cardiac Area	Changes in Terms of Normal	Cardiac Area	Changes in Terms of Normal
	Sq. In.	Per Cent	Sq. In.	Per Cent
Normal area	6.06	100.00	5.59	92.25
Anoxemia ¾ minute	6.09	100.49	5.54	91.42
Anoxemia 1 minute	6.58	108.58	5.60	92.41
Anoxemia 1¼ minutes	6.90	113.86	5.82	96.04
Anoxemia 1½ minutes	6.98	115.18	6.04	99.67

*From the J. Pharmacol. & Exp. Therap. 52, 408, 1934.

TABLE 3

THE EFFECT OF CONTINUOUS ANOXIA ON THE HEART OF THE MAMMAL.*

Heart Weight - Body Weight Ratio

	Number of Animals	Mean	Median	Mode	Per Cent†
Normal	73	0.319	0.309	0.309	100
Anoxemia	15	0.496	0.447	0.443	155

†Per cent of normal mean.
*From the Am. J. Physiol., 116, 290, 1936.

age heart weight-body weight ratio (HW/BW) was increased 155 per cent of the normal value. There was an extreme polycythemia. This marked increase in the number of red blood cells undoubtedly threw a greater load on the heart. It was concluded that the cardiac hypertrophy could have been caused by either a work hypertrophy or an injury hypertrophy or a combination of both factors.

In this connection it may be said that there are reports in the literature to the effect that men who work at extremely high altitudes, such as the miners in the Peruvian Andes, often show cardiac hypertrophy. It should be emphasized that the question of cardiac hypertrophy is of more than academic interest, since there are some physiologists, and cardiologists as well, who believe that a hypertrophied heart is essentially a weak one. It may be safely concluded then, that continuous anoxia of a high degree is capable of producing cardiac hypertrophy.

THE EFFECT OF ANOXIC ANOXIA ON GASTRIC MOTILITY

Although the gastro-intestinal tract is relatively resistant to anoxia there is considerable evidence that certain individuals are rather sensitive to oxygen want. It is of interest to examine the effect of anoxia on the motility of the stomach. Figure 1 shows the effect of

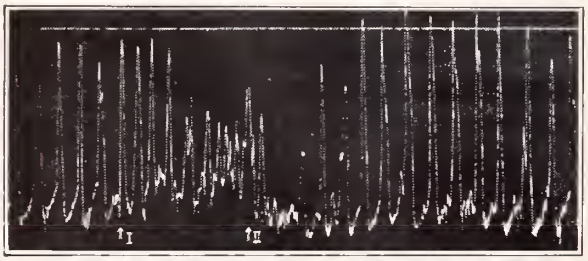

Fig. 1. The effect of anoxemia on hunger contractions. At I, 5 per cent oxygen was administered and at II the animal was allowed to breathe 20 per cent oxygen. (From the Am. J. Physiol., 93: 267, 1930).

anoxia on hunger contractions in the stomach of the normal unanesthetized dog. The height of hunger contractions is distinctly lessened by anoxia although the contractions do not cease until the oxygen in the inspired air has been greatly reduced. Figure 2 shows the effect of anoxia on the digestive peristalsis of the barbitalized dog. It will be readily seen that anoxia practically abolished the digestive contractions and that there was a noticeable loss of tone of the stomach.

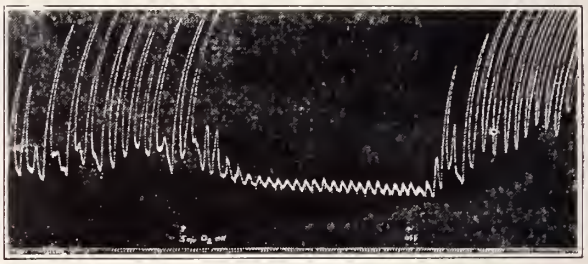

Fig. 2. The effect of anoxemia on digestive movements of the stomach. Note decrease in height of contractions with subsequent recovery after animal was allowed to breathe room air. (From the Am. J. Physiol., 102: 629, 1932).

Figure 3 shows the effect of anoxia on the pyloric antrum and pyloric sphincter. It will be noted that anoxia abolished the normal rhythmical contractions of the antrum and lessened the number of contractions of the sphincter. These tracings were obtained by Dr. J. E. Thomas, Professor of Physiology at Jefferson Medical College, and me, in experiments on unanesthetized dogs with permanent gastric and duodenal fistulæ.

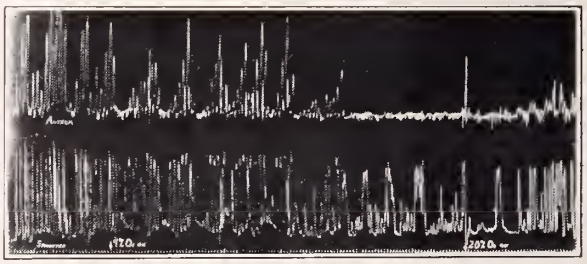

Fig. 3. The effect of anoxemia on the pyloric antrum and pyloric sphincter. See text. (From the Am. J. Digest. Dis. & Nutr., 3: 94, 1935).

Since anoxia produces a diminution in the height of hunger contractions in digestive peristalsis and in antral activity, it would be expected that gastric emptying would be delayed. Figure 4 shows that this is true. It will be noted that the greater the degree of anoxia the greater the prolongation of gastric emptying. This chart also shows that some individuals are much more suspectible to anoxia than others. It shows plainly that there is not much delay in the stomach emptying time until the individual is exposed to an

altitude of about 14,000 feet. Since transcontinental planes fly at approximately 12,000 feet the gastric emptying of the average passenger presumably is not seriously affected. If the passenger becomes air sick, however, he may vomit but this is quite a different matter.

There is reason to believe that one of the causes of delay in gastric emptying produced by anoxia is that the latter condition causes a liberation of epinephrine from the adrenal glands. It is of interest, therefore, to examine the effect of epinephrine or an epinephrine-like substance on gastric motility. Table 4 shows the effect of therapeutic doses of ephedrine on the gastric emptying time in man. It will be seen that the average pro-

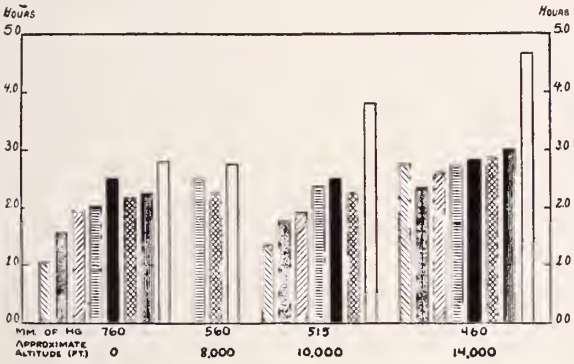

Fig. 4. The effect of anoxemia on gastric emptying time in human beings. Each subject is represented by the same type of shading throughout. (From the Arch. Int. Med., 58: 130, 1936).

longation for the six individuals was 91.66 per cent. Ephedrine obviously produced a greater delay in gastric emptying than did the anoxic anoxia mentioned previously.

In summarizing it may be stated that on the whole a considerable degree of anoxia must be present in the average individual before there is serious interference with gastric motility. On the other hand, some persons seem quite susceptible to anoxia.

THE EFFECT OF ANEMIC ANOXIA ON GASTRIC MOTILITY

Since man often suffers from hemorrhage and since many people nowadays are donating their blood in order to establish blood banks, it is of interest to examine the effect of hemorrhage on gastric motility. It is to be remembered, of course, that hemorrhage produces an anemic anoxia.

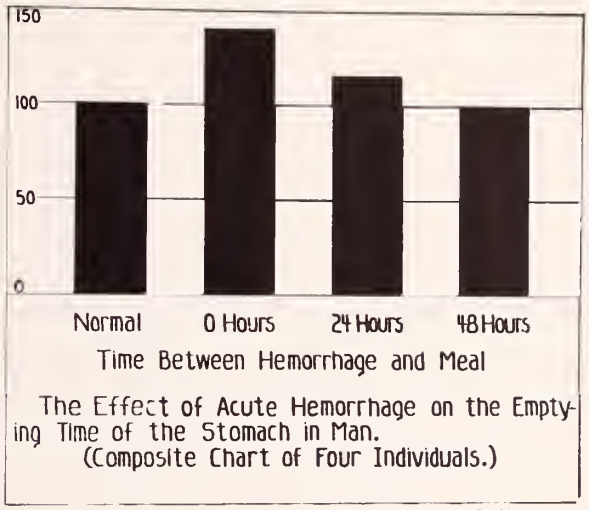

Fig. 5. (From the Am. J. Physiol., 117: 226, 1936).

Figure 5 shows the effect on gastric motility in man of withdrawing one-tenth of the calculated blood volume (about 500 cc. from a 150 pound man). The subjects ate the test meal immediately following the hemorrhage; there was, on the average, a prolongation of gastric emptying of 41 per cent.

TABLE 4

THE EFFECT OF EPHEDRINE (1 Grain) ON THE EMPTYING TIME OF THE STOMACH IN MAN.*

Subject	Normal in Hours	Effect of Ephedrine in Hours	Delay Caused by Ephedrine in Per Cent
1	2.17	3.75	72.80
2	1.94	4.37	125.30
3	1.03	2.25	118.40
4	2.50	4.50	80.00
5	2.02	3.62	79.40
6	2.80	4.87	74.10
Average	2.07	3.89	91.66

*From the J. A. M. A., 106, 535, 1936.

Twenty-four hours after the hemorrhage there was still a delay of about 20 per cent. The stomach apparently regains its normal activity at the end of forty-eight hours.

These experiments suggest that it might be well to advise an individual who had sustained a considerable hemorrhage, to eat only moderately sized meals during the following twenty-four hours and preferably to choose those foods which are known to leave the stomach promptly.

THE EFFECT OF ANOXIC ANOXIA ON ABSORPTION

It is known that individuals who reside at high altitudes do not get fat; as a matter of fact they are generally underweight. It is for this reason and others as well, that we wish to see whether anoxia has any deleterious effects on absorption from the small intestine.

We may first consider the effect of anoxic anoxia or anoxemia on intestinal absorption. It should be pointed out here that thus far my colleagues and I have studied the effect of anoxia on only simply substances, such as water, sodium chloride, glucose, glycine and magnesium sulfate.

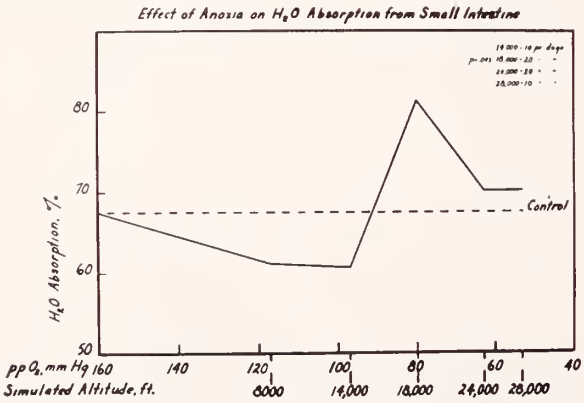

Fig. 6. (From the Am. J. Physiol., 115: 239, 1936).

Figure 6 shows clearly that anoxia does not appreciably interfere with the absorption of water from the small intestine. Absorption is somewhat decreased at an altitude of 14,000 feet (which is approximately that of Pike's Peak), but this is not statistically significant. At 18,000 feet there is a statistically significant increase in the amount of absorption. At present the cause for this is not known. In this connection it must be remembered that water, presumably, is not a normal constituent of the lower ileum, from which part of the small intestine these absorption studies were made.

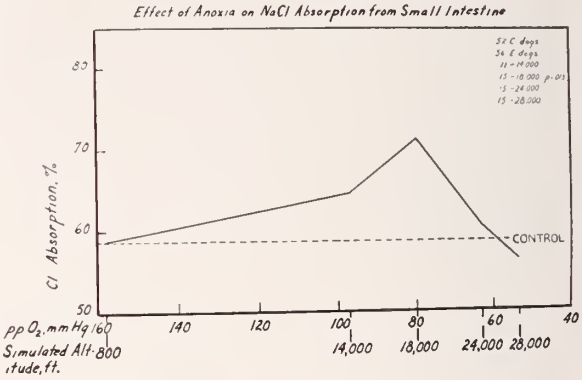

Fig. 7. (From the Am. J. Physiol., 117: 309, 1936).

Figure 7 shows that there is no decrease in the amount of absorption of isotonic chloride solution under anoxemic conditions. The apparent increase at an altitude of 18,000 feet did not prove to be statistically significant although the curve suggests that absorption is somewhat increased at this altitude.

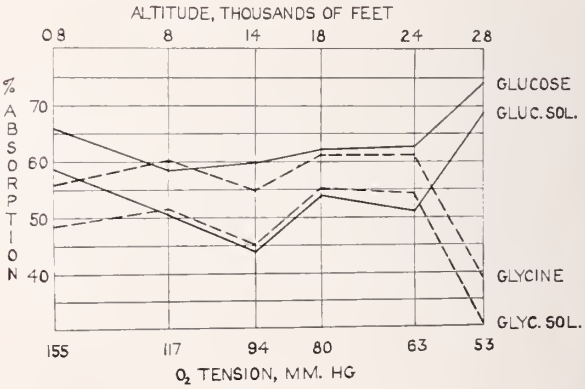

Fig. 8. The effect of anoxemia on the absorption of isotonic glucose solution and of isotonic glycine solution. (From the Am. J. Physiol. 134: 288, 1941).

Figure 8 shows that anoxic anoxia does not influence the absorption of isotonic solution of glucose or of glycine until a simulated altitude of 24,000 feet is reached. Then, for some reason at present not understood, the absorption of glucose is increased while that of glycine is decreased.

Table 5 shows the effect of anoxic anoxia on the absorption of an isotonic solution of

magnesium sulfate (6.66 per cent) from the small intestine. It will be noted that anoxia had practically no effect on the absorption of this substance. It is of distinct importance that the velocity of absorption of magnesium sulfate is appreciably unaltered by anoxia since it is a very depressing drug to the respiratory center and since it is widely used in diseases associated with anoxemia, for example, cardiac failure.

THE EFFECT OF ANEMIC ANOXIA ON ABSORPTION

It is now in order to consider briefly the effect of anemic anoxia on the absorption of certain substances from the small intestine. Man, even in civilian life, is apt to suffer an acute hemorrhage from one cause or another. During war times the chances of suffering from hemorrhage are much greater. It is quite common, however, for individuals to donate their blood nowadays so that blood banks may be developed.

Table 6 is for the main part self-explanatory. It will be noted that following hemorrhage physiological salt solution is absorbed much more readily. There is, however, considerably less water absorbed after a pronounced loss of blood; isotonic glucose solution is also somewhat less readily absorbed, but not significantly so.

In summary, then, it may be said that intestinal absorption is relatively resistant to anoxia since neither moderately severe anoxic anoxia nor anemic anoxia, which has been produced by a massive hemorrhage, has any profound effect on absorption from the small intestine. Although further studies are needed it seems reasonably safe to assume that the absorption of food substances in general from the intestine is not materially affected by a pronounced hemorrhage or by relatively high altitudes.

THE EFFECT OF ANOXIA ON SECRETION

There has been but little work done on the effect of anoxia on secretion. Figure 9 shows the effect of anoxia on the amount of gastric secretion. It will be seen that anoxic anoxia produces a distinct diminution in the quantity of secretion. It has also been shown that there

TABLE 5

ABSORPTION OF MAGNESIUM SULFATE FROM THE SMALL INTESTINE.*

No. of Animals	O_2 in Per Cent	Approximate Altitude in Feet	Absorption in Per Cent
Anoxemia			
5	15.37	8,000	15.5
5	12.28	14,000	14.9
5	10.56	18,000	12.2
5	8.35	24,000	11.3
Average			13.5
Control			
20	21.0		13.7

*From the Arch. de Internat. Pharmacodyn. et de Therap. 62: 175, 1939.

TABLE 6

EFFECT OF HEMORRHAGE (3.2 Per Cent of Body Weight) ON ABSORPTION FROM SMALL INTESTINE*

	ABSORPTION OF FLUID				ABSORPTION OF SOLUTION			
Substance	Control	Hemorrhage	Difference	p.	Control	Hemorrhage	Difference	p.
Distilled water	68.5	40.1	−28.4†	<.01				
0.9 per cent NaCl	47.6	81.0	+33.4	.015	58.1	81.0	+22.9	<.01
5.5 per cent glucose	62.9	54.1	−8.8	.29	68.2	61.1	−7.1	.34

†A minus sign indicates reduction of absorption by hemorrhage.
Probability of difference occurring by chance. Should be less than 0.05 for significance (Fisher).
*From the American Journal of Physiology, 124, 102, 1938.

is a diminution in the secretion of free acid.[7] These changes, however, are not marked and are largely of academic interest.

Table 7 shows the effect of anoxic anoxia on the basal secretion of the stomach. It will be seen that the volume of secretion and the

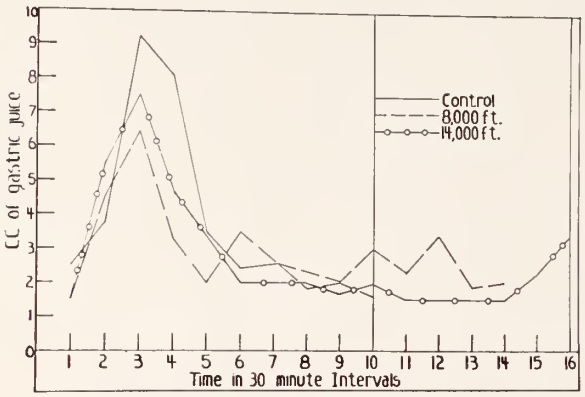

Fig. 9. The effect of anoxemia on the volume of gastric secretion in the Pavlov Pouch dog. (From the Am. J. Physiol., 127: 637, 1939).

chlorides of the basal secretion are not appreciably affected by oxygen want within ranges compatible with consciousness in the unacclimatized dog. At great altitudes the basal secretion is apparently diminished. It is of practical interest that the basal secretion of the stomach is relatively unaffected by oxygen want. If anoxic anoxia stimulated the gastric basal secretion, it would have a deleterious effect on patients afflicted with gastric ulcer who were accustomed to do considerable traveling by airplane.

Table 8 shows the effect of anoxic anoxia on the secretion of urine in the dog. It can readily be seen that effective degrees of anoxia cause a marked diminution in the urine secretion. There is one point of interest which should be mentioned, and that is that occasionally anoxia will cause polyuria. The reason for this has not been explained. There have been current reports in the literature that experiments carried out on individuals who travel by airplane show an increase in the amount of urinary secretion. These reports should be accepted with considerable hesitation, because it is well known that excitement will produce polyuria. It might well have been that the subjects in question were somewhat excited by the fact that they were going to go up in an airplane and indeed the

TABLE 7

THE EFFECT OF ANOXIA ON THE BASAL SECRETION OF THE STOMACH OF DOGS.*

Approximate Altitude in Feet	Partial Pressure O_2 mm. Hg.	Volume of Secretion cc.	Chloride as NaCl Per Cent
0	159	4.8	.72
8,000	117	4.4	.67
14,000	94	5.5	.59
18,000	80	4.2	.62
24,000	63	4.3	.63
28,000	53	2.9	.59

*From the American Journal of Digestive Diseases, 8, 155, 1941.

TABLE 8

EFFECT OF ANOXEMIA ON SECRETION OF URINE.*

Oxygen Per Cent	Number of Trials	Number Diminished	Number Unchanged	Number Increased
5.0	13	13	0	0
6.0	6	6	0	0
6.67	11	9	2	0
8.0	6	5	1	0
10.0	12	10	1	1
12.0	2	2	0	0
Total	50	45	4	1

*From the Proceed. Soc. Exper. Biol. & Med., 33, 479, 1935.

mere thought of going anywhere might have influenced the urinary secretion.

In summary, it may be stated that on the whole, both gastric and kidney secretion are relatively resistant to anoxemia, and while secretion is somewhat lessened, from the clinical standpoint, at least, the amount of the diminution is of no practical importance.

ACCLIMATIZATION

It is generally known that after an individual has lived in high altitudes for a certain period, he becomes acclimatized. He gets over his mountain sickness, his appetite returns, and, in short, he practically regains his normal health. All this is true, of course, if he does not attempt to reside at too high an altitude.

There is every reason to believe that individuals suffering from certain disorders also pass through a process of acclimatization. This certainly happens in tuberculosis, following the destruction of large areas of lung tissue; it is noticeably true in some malformations of the heart, such as a patent ductus arteriosus and it is probably true in other conditions associated with chronic anoxia.

There are not many criteria for acclimatization. The most widely known criterion and probably the easiest to ascertain is that acclimatization is accompanied by an increase in the number of red blood cells and an increase in the amount of hemoglobin.

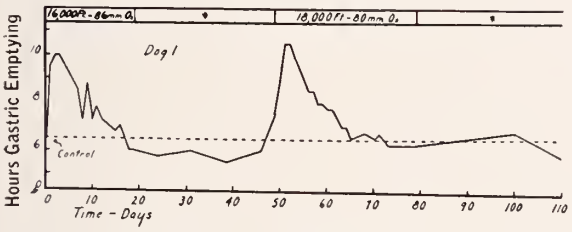

Fig. 10. Acclimatization to discontinuous exposure to anoxia. See text. (From the Am. J. Physiol., 137: 160, 1942).

During the past year considerable research has been done in our laboratory on the problem of acclimatization during discontinuous exposure to anoxia. The reason we have studied discontinuous anoxia is that the airplane pilot is aloft for only a few hours a day. Relatively few people are subjected daily to continuous anoxia.

Figure 10 shows how the stomach may become acclimated to low oxygen tensions. It will be seen that oxygen want initially produced a prolongation in the gastric emptying time. The animals were exposed repeatedly to discontinuous anoxia (eight hours a day, except Sunday) and the graph plainly indicates that after a certain number of days gastric emptying time returned to normal. Gastric emptying time, then, may be used as a criterion for acclimatization.

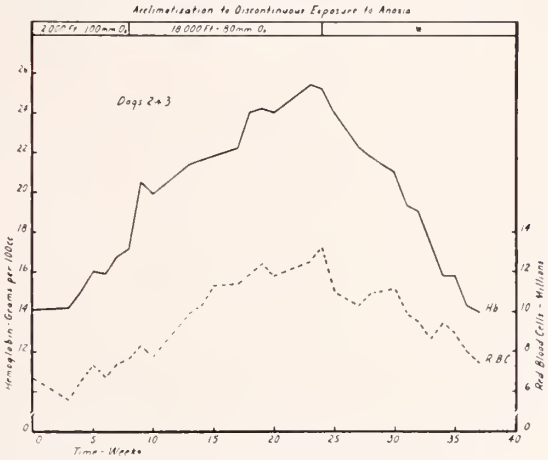

Fig. 11. (From the J. Aviation Med., 13: 182, 1942).

Figure 11 shows the effect of discontinuous anoxia on the number of red blood cells and the amount of hemoglobin. This animal, too, was subjected to anoxia for eight hours a day (except Sunday). It will be seen that there was a pronounced rise in the number of erythrocytes and in the amount of hemoglobin. This graph is of distinct interest, because there is still some controversy as to whether or not discontinuous anoxia is capable of producing acclimatization.

It would seem, therefore, that pilots, who are aloft for several hours each day, should show a certain amount of acclimatization. Evidence is accumulating that this is actually true.

SUMMARY

I will summarize my paper very briefly by stating that I have discussed the effect of anoxia on the heart, on the gastro-intestinal tract, on the processes of absorption and secretion and have said something about acclimatization. It has not been possible in the time

allotted me to take up the effect of anoxia on all the physiologic processes of the body. As mentioned in my introductory remarks I have touched only on the principal researches my colleagues and I have carried out in our laboratory at the West Virginia University School of Medicine.

It is my feeling that as aviation develops the subject of anoxia will become increasingly important and physicians, too, will recognize more and more that anoxia in one form or another is often a concomitant symptom of many body disorders.

REFERENCES

1. Kaufman and Meyer, H. H.: Med. Klin., 44, 45, 1917.
2. Somervell, T. H.: J. Physiol., 60, 282, 1925.
3. Takeuchi, K.: J. Physiol., 60, 208, 1925.
4. Van Liere, E. J.: Am. J. Physiol., 82, 727, 1927.
5. Gremels, H. and Starling, E. H.: J. Physiol., 61, 297, 1926.
6. Sands, J. and De Graff, A. C.: Am. J. Physiol., 74, 416, 1925.
7. Sleeth, C. K. and Van Liere, E. J.: Proceed. Soc. Exper. Biol. & Med., 36, 208, 1937.

THE TREATMENT OF THIRD DEGREE BURNS*

By CAPTAIN JAMES S. KLUMPP, M. C., U. S. N. R.
Huntington, West Virginia

THE treatment of burns has been a controversial subject for many years and the continuous search for a therapeutic measure which would infallibly produce rapid healing on a body surface area partially destroyed by thermal, chemical or electric agents has not as yet yielded any one method which is indicated under all conditions. The subject is also of intense interest to the military surgeon at the present time because of the number and types of burn casualties occurring in combat areas, with facilities for treatment ranging from the simple equipment of an advanced aid station to those afforded by a hospital ship or base hospital; it must also be of vital interest to the medical man on the home front, when we note the rising curve of industrial activity with an attendant increase in casualties and loss in manpower hours. The unnecessary neglect or maltreatment of a severe burn is the main differential factor between an early return to civilian or military duty of the individual, normal in body function and appearance, and possible death or prolonged disability with disfigurement and deformity.

THE AUTHOR

Dr. Klumpp, graduate University of Michigan Medical School; on active duty with the U. S. Navy in the Pacific.

Perhaps the experience gained in military surgery will be of some help to the civilian physician in developing a technic for general use. Within the past year we have had to care for many of this type of casualty under varied conditions, particularly as regards environment and causative agent. The soldier or sailor may receive burns from a bomb or shell blast, or from exploding or burning gasoline or oil, and electric flash burns are not uncommon. Many of our cases were immersed in sea water for some time after receiving their burns; their primary care was conducted under rather rugged conditions, and many hours elapsed before facilities for adequate treatment became available. In civilian life many of these adverse conditions do not prevail, but by the same token, under more ideal conditions, the end results should be far more satisfactory.

We will not discuss the historical side of the subject, nor the classification of burns according to the degree of tissue involvement, inasmuch as this paper will deal only with third degree burns, i.e., where there is actual

*Presented before the seventy-sixth annual meeting of the West Virginia State Medical Association, at Charleston, West Virginia, May 18, 1943. Publication authorized by Division of Publications, Bureau of Medicine and Surgery, Navy Department, Washington, D. C.

destruction of tissue. Chronologically, the severely burned patient first presents a picture of primary shock, which develops immediately after injury, and is caused by two factors—loss of plasma and pain. The pulse rate is increased and blood pressure lowered with an attendant cerebral change varying from a faint to a retarded mental reaction. Within a short time, usually from one to eight hours, the patient passes into the stage of secondary or true burn shock, which is caused by the continued and increasing loss of blood plasma. Here we find a more rapid and thready pulse, shallow respiration, mental apathy, restlessness and lowered blood pressure—a picture identical to that of traumatic or surgical shock. During the period of primary shock the patient may look fairly well, may even walk some distance, and suddenly expire as a result of acute circulatory failure.

LOSS OF PLASMA

The loss of plasma may assume alarming proportions within a few hours. It has been observed that approximately one-third of the total blood plasma may be lost before a true clinical picture of shock becomes manifest. The process begins early and advances rapidly; I have seen a 20 per cent loss of plasma within thirty minutes after injury and a total loss of over 50 per cent plasma in many cases. Because of the time element, we must begin treatment early and as adequately as possible. It is unwise, if not criminal, to spend several vital hours in debridement and other local treatment, while the patient is passing into a state of fatal shock; the timeliness and adequacy of our attention to general care is a very definite measure of the knowledge and skill of the surgeon. You must treat the patient before you treat the burn. There is always some degree of shock present in every severe burn, directly proportionate, usually, to the total amount of plasma lost, which in turn is affected by the total area of body surface affected and by the amount of tissue destruction. In a recent experience some of our patients with 60 per cent involvement by second degree burns made a prompt recovery while others with 25 per cent involvement in third degree burns presented an early picture of circulatory failure.

With the recent development of a satisfactory method for the preparation and storage of blood plasma we have a simple ideal agent for both shock prophylaxis and therapeusis always at hand. Used early and in adequate amounts, it quickly restores blood volume to normal. Hemoconcentration is the natural result of the loss of body fluids. We have seen patients with red cell counts of over 8,000,000 eight hours after being burned, which would indicate a 50 per cent plasma loss in that period. The degree and rate of change in hemoconcentration may be readily determined by regular hematocrit readings; the specimen is centrifuged and the ratio of cells to plasma is read from the graduated tube. The normal reading is taken as 45, which is used as one standard in estimating the amount of plasma required in any one case. Harkins has suggested the administration of 100 cc. of plasma for each hematocrit point above 45. There may be a continuation of plasma seepage during the administration of these early large amounts of plasma, hence the necessity of secondary hematocrit readings in order to maintain a normal body concentration until the tissues in the burned area are sealed by natural methods or protected by an external agent.

Other substances have been used for intravenous replacement therapy, namely, saline, gum acacia and saline, glucose and saline, and whole blood. In our opinion the benefits of plasma far exceed these substances. It may be rapidly put into solution in sterile water, and is easily administered, even under adverse conditions. There is no indication for using whole blood for burn shock therapy because only plasma has been lost and we already have a high concentration of red cells. The other fluids mentioned are best used as adjuncts after body plasma loss has been controlled and fluids alone are required.

If you wish to use the percentage of body surface burned as a gauge for estimating plasma requirements, the following table might be of value:

Head and face	5%
Entire trunk	40%
Arms	15%
Hands	5%
Thighs	20%
Feet	5%
Legs	15%

In the use of this simple table, we give 50 cc. of plasma for each percentage point of body surface burned, with further amounts administered as indicated.

It is always better to err on the side of giving too much plasma according to this table, and an additional 500 cc. over the indicated amount might be the direct means of preventing a relapse into shock.

It has been stated by several observers that there is a definite indication for the early administration of adrenal cortical hormone. It is believed to have a constricting effect on the capillaries and thus decelerate the loss of plasma. We used it in many cases as part of the effort to relieve shock, but the difficulty of using controls under combat conditions makes it impossible to give a definite opinion as to its value.

As part of their shock therapy, these patients require morphine, early and adequately. We do not use any stated total dosage, but give it in ½ Gr. injections at intervals frequent enough to relieve pain.

ANOXIA

Anoxia is a recognized accompaniment of shock, and plays an important rôle in the acceleration and perpetuation of circulatory collapse. When available, oxygen therapy by nasal tube, tent or B.L.B. mask is strongly indicated during the entire period of secondary shock. It affords another means of breaking into the vicious cycle present in any case of shock.

Some writers describe a phase of toxemia which occurs between two and four days after the burn, and before the evidence of secondary infection becomes manifest. In our cases we noted four deaths occurring after fifty-two hours which we could not attribute to shock, inasmuch as they had been given adequate plasma therapy with a satisfactory response. Although these cases did present a picture of fever, vomiting and cerebral dysfunction, there was no local evidence of infection. However, clinical recognition of a toxemia and its differentiation from shock or infection is not of vital importance because the proper blending of general and local treatment in any given case will tend to eliminate the possibility of toxin production and absorption.

We assume that all burns are sterile and remain so for about twelve hours, and that proper care under aseptic conditions will eliminate the possibility of infection, or, at worst, bacterial activity will be reduced to a minimum.

SECONDARY INFECTION

If neglected or maltreated early, and even in many cases where every care has been given, secondary infection may develop, usually after three or four days. The picture may vary from a relatively mild pyocyaneus to a fulminating streptococcus or staphylococcus infection, B. coli; or a combination thereof. There is always the possibility of gas gangrene or tetanus developing under the anaerobic protection of an improperly debrided area, an eschar-forming coagulant, such as tannic acid, or a combination of both. One cannot stress too strongly the rôle that bacterial contamination by medical and nursing personnel plays in the occurrence of secondary infection. A majority of cultures from infected burns is positive for bacteria commonly present in the nasopharynx, i.e., Streptococcus hemolyticus, Staphylococcus albus and diphtheroids. During the course of any local treatment, whether in the ward or operating room, it is imperative that all persons present, including the patient, have both mouth and nose masked. Many agents have been recommended for the control of secondary pyogenic infection, such as gentian

violet, brilliant green, acriflavine, silver nitrate, mercurochrome, dichloramin T, used locally, and the sulfonamides, both locally and by mouth. In our cases, most of which were seen many hours after injury, we used simple saline spreads for the milder infections; in the more severe cases we used azochloramide spreads in a strength by 1:3300, plus sulfathiazole orally, and usually had the infection under control within three to five days.

LOCAL TREATMENT

Although a variety of opinion exists as regards the best agent for use in local treatment, there are several cardinal preliminary steps necessary. First, we must change a contaminated or potentially contaminated wound into a clean wound. This is usually not difficult if the case is seen early, but if some one has applied an ointment, jelly or a coagulant over the area before debridement, the job may be tedious. We generally use a commercial detergent to remove these greasy substances, but if this is not available, benzine will serve very well. Debridement is best done in the operating room with the surgeon and assistants gowned and gloved and everyone, including the patient, masked. It requires patience and plenty of white soap suds, applied with cotton pledgets. All tissue shreds are removed with tissue forceps; one should never produce bleeding in the excision of necrotic tissue. The cleansed and debrided area is thoroughly irrigated with warm saline solution and is then ready for the local treatment of choice. In those cases where debridement is too painful, an intravenous anesthetic is indicated.

There are no less than ten different methods of local treatment advocated and in common use at present; their number and diversity illustrate very well the efforts to develop one agent which will satisfy our requirements of antisepsis, protection and rapid healing. Time will not allow even a brief description of all, but they may be listed as follows:

1. Tannic acid.
2. Pickrell treatment.
3. Allen and Koch method.
4. Dyes — gentian violet, brilliant green, acriflavine.
5. Cod liver oil and other ointments.
6. Bunyan envelope.
7. Sulfonamides.
8. Paraffin.
9. Plastic film (Burn fluid 19 and 20).

The first three of these methods are described briefly, with observations as to their particular qualifications.

1. Tannic acid was first advocated by Davidson in 1925. It is not bactericidal and deteriorizes rapidly in solution. Its application to a burned area forms a rather stable compound with the bony tissue proteins and produces a firm coagulum. Repeated application results in a heavy rigid eschar. It affords excellent protection to a denuded surface and reduces plasma loss, but tends to contractual deformity and observation of the wound is not possible. It is commonly used as a spray and in a jelly base in strengths of 2 to 20 per cent. It should never be used on the face, flexor surfaces, genitalia or digital extremities, where disfigurement or contractural deformities might ensue. It should never be applied to any but a recent and noninfected burn. The products of bacterial invasion are sealed under the heavy eschar which does not permit any observation of the process of healing. Its use is indicated only in clean burns, only on certain well-defined areas of the body, and only by those expert in its application, which certainly places definite limitations on its benefits either in combat or in industry. These exists definite evidence that tannic acid decelerates tissue healing and recent reports from the British are to the effect that tannic acid in amounts used for a severe burn will produce definite liver damage.

2. The Pickrell technique has been in use two years. A mixture of 3 per cent sulfadiazine and 8 per cent triethanolamine is sprayed over the burned surface as soon as

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debridement has been accomplished. Within a few hours a soft, pliable, translucent eschar is produced; pain due to exposure of the burned surface disappears very shortly, and the process of healing can easily be observed through the eschar. In those cases where debridement and spraying cannot be carried out early, we use 5 per cent sulfadiazine and 8 per cent triethanolamine in a water soluble jelly base over the area, followed by a moderate pressure dressing. The jelly tends to prevent infection and can easily be removed with saline spreads when debridement can be done aseptically. The same combination may be used in a stearin base ointment. Neither preparation will injure raw surfaces or mucous membranes and may be used with impunity even around the eyes. I like to supplement the local treatment with the oral administration of sulfathiazole, particularly in those cases presenting any degree of secondary infection or where debridement has been delayed. Sulfonamide blood level determinations should be made at regular intervals during the first few days.

3. The technique developed by Drs. Koch and Allen of Chicago offers very favorable possibilities where patients are seen early and can be treated in hospital. Their objectives in the local treatment were to use the simplest possible dressing which would protect the burned surface, not destroy any viable tissue, provide for serum drainage from the area, afford moderate constant pressure, keep the injured part at rest and be easily removable in case infection developed.

WOUNDS KEPT CLEAN

Every effort is exerted to make each wound a clean wound. All clothing is removed, preferably by tub-soaking at 100° F. The process of cleansing an extensive area of debris and contaminated material is carried out as previously described. The cleansed area is then covered with a few layers of fine gauze strips impregnated with petrolatum; over this several layers of dry sterile gauze flats are placed, followed a layer of sterile mechanics' waste and an elastic bandage applied firmly enough to fix the dressings and keep the part at rest. Dressings are changed at twenty-four to forty-eight hour intervals.

The very fact that so many different methods of treatment are advocated is proof of the insufficiency of any one technique under all conditions. No factor is more important than asepsis, but this ideal is no more attainable on a hostile beach under shellfire than in many industrial situations. We cannot always be masked, gowned and gloved and work in the aseptic confines of a well-equipped hospital, so we must of need select a method or combination thereof which is applicable under nonideal or adverse conditions, simple in its use, bactericidal, protective, and which will not add complicating sequelæ to a serious lesion.

CONCLUSIONS

I have had occasion to try some of the ten methods of treatment previously mentioned, have used and seen the results in many cases treated by one of the three methods previously described, and have reached several definite conclusions. Tannic acid cannot be used on the face, flexor surfaces, genitalia or digital parts; it cannot be used satisfactorily on a surface which has been debrided partially or not at all; if debridement is not done thoroughly and under strict asepsis, secondary infection is almost sure to follow tanning. The rigid heavy eschar tends to cover and mask infected areas, and will both produce and accentuate contractual deformities. Because of these factors we believe it has little use except when used on certain body areas by an expert and under aseptic conditions.

The treatment advocated by Koch is apparently satisfactory in his hands, but one is still confronted with the absolute necessity of aseptic care throughout the entire course of treatment; further, the application of petrolatum gauze has no bactericidal effect on any infection already present or in process of development.

During the past several months we have had occasion to use three of the methods

already discussed; we have also read the reports from other combat areas and have seen the end results of varied treatment by other officers. With this same experience you might differ somewhat in your conclusions as to what constitutes the best available treatment under all conditions. Our own ideas were published in the form of a directive for use in a recent operation and are presented herewith in compact form. The measures classed as first aid, although simple and easily carried out, are of vital importance; the patient's welfare, even his chance of living, may be influenced by failure to accomplish adequately some one detail. We attempt to keep the patient warm. In this respect it is far more important to have sufficient protection between the patient and the ground, or whatever surface he may lie on; if only three blankets are available, we place two under the patient's body and one over him. We do not disturb the patient's clothing in any way. We give morphia in ½ or 2/3 Gr. dosage, and at the same time inject an ampoule of adrenal cortical hormone and a booster shot of tetanus toxoid. Our next step is to give blood plasma intravenously in amounts proportionate to the surface area of the burn. We do not attempt any debridement of exposed surfaces, but apply an ointment of 5 per cent sulfadiazine and 8 per cent triethanolamine in a water soluble jelly base. An alternate preparation is composed of 3 per cent of crystal violet and brilliant green with 1 per cent neutral acriflavine in the same type of jelly base. A sterile protective pressure dressing is then applied and the patient is ready for transfer to hospital.

TREATMENT UPON ARRIVAL

Upon admission the patient's clothing is gently removed; he is then wrapped in a sterile sheet and covered with blankets, and a heat cradle is used, if available. Additional amounts of plasma and cortical hormone are given as indicated. When the patient is well out of shock he is removed to the operating room, which is set up as for major surgery. All personnel is gowned, gloved and masked. Pentothal sodium is given intravenously in those cases requiring any extensive or painful operative procedure. Debridement is accomplished by two means. First, we do a gentle but thorough cleansing with cotton pledgets and plenty of floating white soap suds. We never use gauze or a brush. Any remaining partially attached debris or tissue is removed with tissue forceps and scissors, care being used to produce no bleeding. The entire burned area is then thoroughly irrigated with warm sterile salt solution, and sprayed with a warm solution of 3 per cent sulfadiazine and 8 per cent triethanolamine. This procedure is repeated every hour the first day, every two hours the second, and every three hours the third day. One may also use an alternate spray composed of 1 per cent each of crystal violet and brilliant green and 0.1 per cent neutral acriflavine. You will note the difference in percentage strength between the ointment and spray form of both preparations. The patient is then placed in bed and covered with a sterile sheet. The heat cradle is again used to maintain a bed temperature of ninety degrees. Sulfadiazine or sulfathiazole is given orally in 3 to 5 grams daily dosage until the period of possible infection has passed. The sulfonamide blood level is determined daily, as is a microscopic examination of the urine. It is essential to get the patient out of bed at the earliest advisable moment; an ambulatory patient always does better than a bedfast individual, both physically and psychologically. We encourage early movement of fingers and toes when the extremities are involved; if the face is burned we insist on his chewing gum at frequent intervals.

ESCHAR WATCHED CLOSELY

The eschar must be observed daily; if any infection is detected, that portion of the film is soaked with warm saline spreads and removed. The infection can then be treated locally, and after it is under control, the area is resprayed. Do not remove the eschar under fourteen days; if it tends to separate around the margin, respray the defect. At the proper

time the eschar is easily removed with warm saline spreads. The granulated surface is then ready for preparation for grafting.

Before closing, it might not be amiss to mention very briefly the subject of skin grafting as it pertains to the treatment of third degree burns. This type of injury is by far the most common etiologic factor in the production of denuded body surface, either in war or peace. We know that in these severe burns granulation instead of epithelialization is the rule, and is due to three factors:

1. Total amount of tissue destruction.
2. Degree of local infection.
3. Lowered vitality of the patient.

PREPARATION FOR GRAFT

Inasmuch as skin makes the finest possible covering for a raw surface, our problem is centered on the local preparation of the area for reception of a graft; the problem of general vitality and infection has been cared for in the earlier treatment. The care of such a surface is directed toward rapid healing without the occurrence of contractures of keloid scarring. After removal of the eschar this is best accomplished by the use of hypertonic saline spreads or, better yet, immersion in a saline bath twice daily. During the intervals the patient is kept on a sterile sheet under a heat cradle and the burned area protected by saline or vaseline gauze spreads. In smaller burned areas, epithelialization may become complete and without contractual difficulty, but larger areas always require grafting. Just before grafting, the area is thoroughly irrigated with sterile saline solution and the surrounding skin prepared as for other surgical procedures. The granulations may be either curetted down to healthy fibrous tissue or may be excised in one sheet to the necessary depth. Usually a simple curettage will suffice. All bleeding must be arrested by pressure or hot packs.

There are different types of skin grafts used, also several methods of obtaining them, perhaps the more common being the Padgett dermatome and the Blair-Brown suction box and blade. The dermatome is comparatively simple in action and is of especial value in cutting pattern grafts of a uniform thickness. The split graft, usually cut 3 to 6 mm. in thickness to include epidermis, dermis and bits of corium, is of particular value because several repeated grafts may be taken from the same donor site at proper intervals; this is important when large areas of the body surface have been burned, and potential donor sites are few in number. The graft is fixed with peripheral sutures, the outer surface dusted with one of the sulfonamide crystals and a firm, even pressure dressing applied. The type of dressing and the amount of pressure exerted on the graft is very important if one wishes to have a good "take."

The dressings are removed after seven days and if the graft has been successful, the grafted area is irrigated and a moderate pressure dressing used until consolidation of the graft is complete. Failure of any portion of the graft to "take" is usually evidenced within three or four days by odor and discharge; when this occurs, we start again from scratch. Very often a blood transfusion will change the picture entirely when a second graft is undertaken. As a final step we institute light massage and passive motion of the parts involved. This last part of the treatment is best carried out under the direction of a physical therapeutist, and plays an important rôle in the restoration of normal function and appearance.

DISCUSSION

Dr. O. B. Biern, chairman, Parkersburg: General Rankin, would you care to comment on this paper?

Brigadier General Fred W. Rankin: Mr. President, I think we are to be congratulated on hearing such a splendid presentation of the burn problem, for, as the Captain says, it is one of those particular problems with which the military is very deeply concerned, and as you can see from his report on the multiple types of treatment, the situation has not been cleared up satisfactorily as yet.

I think, however, that some of the general principles of handling burns and military casualties have

been materially cleared up both in the Army and the Navy and that we are relatively in agreement on the treatment of third degree burns.

First aid treatment of burns differs considerably in the field from that and on a ship; that is, it differs materially only in the type of agent used.

I think it is of greatest importance that first aid be handled properly and administered as quickly as possible, for when one gets the cases back to hospital facilities almost any kind of treatment that the particular officer is versed in will yield satisfactory results in his hands.

In the Army, we believe that first aid treatment is best handled by the use of some very simple ointment. At present, I think we are using boric acid ointment together with some type of dressing, preferably a pressure dressing, but we do not make any effort at extensive treatment, because, as Captain Klumpp has pointed out, if the burns are extensive and deep, these patients are to be treated first for shock and the abatement of pain, and the immediate institution of replacement of lost plasma. These are the sheet anchors. I think some of the brilliant results that the Navy obtained in Guadalcanal and the South Sea Islands were due largely to the principle of giving blood substitutes right in the line, because those men couldn't be moved until night and all treatment had to be carried out where the injuries were received.

Captain Klumpp was discussing particularly third degree burns, and I want to emphasize one or two points that I think are most important in the handling of this particular type of burn.

In the first place, these patients come back to an Army surgeon with their uniforms still on. There has not been much done for them except local application of ointment, and if they are in very satisfactory shape they are treated much as he outlined to you, that is, in an operating room under as nearly aseptic conditions as possible.

We have followed the rule that the Navy outlines in abandoning the use of tannic acid save only in very exceptional cases, and then only in the hands of people who are properly trained and enthusiastic about it. The dangers outlined are very real ones, and tannic acid in military surgery should be handled most adroitly.

At present our preference seems to be for a pressure dressing of the type of the Koch dressing, with boric acid ointment as the simple medicament to be used under it. Boric acid ointment, it is true, is not bactericidal; neither is sulfadiazine ointment. Sulfadiazine ointment is bacteriostatic, but it is my belief that we are finding out more and more that the beneficial effects from the sulfonamides in the treatment of battle casualties come from the sustained blood level as a result of oral administration rather than from local application, and I have no enthusiasm for the use of the sulfonamides in local wounds. I would prefer to receive a battle casualty with the proper dressing on his wound and such sulfonamides as could have been given him, than to have had him receive a profuse dusting of a sulfonamide into the wound and none by mouth. I am convinced that it is the action of the sulfonamide when taken orally, the sustained blood level, that does the good, and not the local action in the wound, and for that reason I am willing to go along with the present trend toward the use of boric acid ointment under the pressure dressings. That varies, depending on the location of the burn and many other factors.

I think that Captain Klumpp's suggestion that early skin grafting is one of the most important factors in the treatment of large areas of third degree burns is significant in that this form of treatment helps get these men back to duty and eliminates the contractual deformities. We follow very much the same technic that he does, and urge that these cases be grafted at the very first opportunity.

As has been said, we could go on and discuss this subject indefinitely. However, I do think we are making progress in the treatment of burns. I think that one of the great opportunities to learn about burns was seized upon adequately by the National Research Council recently in the fire at Boston. Much knowledge was gained that is now being applied and will continue to be helpful in the treatment of casualties in the war.

I have not had an opportunity to say this to Captain Klumpp, but, as you know, in the landing operations in Africa the Army was able to take care of its casualties only on the field, and, in fact, evacuated them back immediately to the ships in the harbor. There they were placed in the hands of the naval personnel and quickly returned to this country. I had the opportunity to see all of the men who returned to Walter Reed Hospital. All of them had been handled and operated upon, regardless of the type of wound, by naval surgeons on these transports, and I say to Captain Klumpp as I say to you, they had done a most extraordinary job.

Dr. L. H. Mills, Clarksburg: There has been some question of the crystallization of the sulfonamides in the urine. I would like to ask if there has been any alkalinization of the urine to counteract this.

Dr. Walter G. J. Putschar, Charleston: I would like to ask two questions. First, how much and how often is this extract given? Second, in the third degree burns is it desirable to stop the oozing of plasma to the utmost or is it desirable to let some oozing take place in order to remove toxic substances and replace plasma intravenously? In other words, is there a relationship between the toxemia that will develop and the stopping of the oozing of plasma?

The Chairman: If there are no further questions, we will ask Dr. Klumpp to close.

Captain Klumpp: To answer Dr. Mills, we checked urine specimens every twenty-four hours. We did not find crystals in any case, but if we had we would have continued sulfathiazole parenterally, because I believe, as General Rankin has said, that the primary benefit comes from the keeping of constant blood levels.

You did not ask, and I did not mention in the paper, but we attempt, when we are using sulfanilamide, to keep a blood level of 5 to 8 milligrams per cent, and in using sulfathiazole or sulfadiazine we brought the blood level up to 14, 15, and even 18 milligrams per cent constantly.

I didn't go into any dietary régime at all, but if we find crystals (and that happens once in a while in cases where these patients are having forced fluids) we give the patient a high protein diet and plenty of fluids. However, we are not inclined to worry very much about the appearance of sulfathiazole crystals in the urine, because one must differentiate: we are not working in a civilian hospital where we can do all these niceties, we are working under combat conditions, and even aboardship we aren't entirely safe and cannot do some of the things there that we could do at a base hospital ashore.

Dr. Putschar, in answer to your question about allowing seepage of body plasma, we believe that the oozing should be stopped at the earliest possible moment. That is one of the reasons for using this coagulant such as we have described. In the first place, why let more plasma seep from that burned area just to take off contamination, when all your wounds or burns are sterile for at least twelve hours and you don't have to worry about the infection? The big idea in general treatment is, first, to prevent the plasma loss, and, second, to replace that already lost.

DON'T GRUMBLE

If your legs are worn out paying calls—*don't grumble*—you are still walking on American soil.

If your patient gets to his appointment late—*don't grumble*—he may have ridden a bus to your office.

If you are bored with patients who abuse their digestive tracts—*don't grumble*—the O. P. A. will treat them for you.

If you are called out at night—*don't grumble*—picture the horse and buggy and dirt roads.

If the patients flock to you at all hours—*don't grumble*—remember the old days when you almost ran to meet a patient.

If a neurotic calls you on the telephone—*don't grumble*—at least you are saved the ordeal of looking at her.

If your secretary makes a mistake — *don't grumble*—think of the mistakes of yours which she hides.

If the income tax hits you a mighty wallop—*don't grumble*—you are still privileged to pay in Uncle Sam's currency.

If you are forced to bed with sickness—*don't grumble*—think of the medicine you would have to take if you were one of your patients.

If you feel so tired you don't think you can last another day—*don't grumble*—Hitler is feeling the same way.—*J. South Carolina M. A.*

INFECTIOUS TB BAR TO MARRIAGE

No states require a premarital physical examination for tuberculosis. This fact came to light again when Dr. C. M. Sharpe of the States Relations Division, U. S. Public Health Service, consulted the Legislative Reference Service of the Library of Congress, for information on the subject.

However, there are three states—Washington, North Carolina and North Dakota—which prevent persons from marrying who have infectious tuberculosis.

Three other states — Delaware, Indiana and Pennsylvania — have general laws covering the marriage of persons with transmissible disease.

STERILITY AND ARTIFICIAL INSEMINATION

By H. B. COPELAND, M. D.
Wheeling, West Virginia

When we speak of artificial insemination in the treatment of sterility, we must first of all find the etiological factors causing the sterility. These may be listed as:

1. Sterility in the male.
   a. Gonorrhea.
   b. Glandular disturbances with maldevelopment of the sex glands.
   c. Hypospadias and epispadias.
2. Sterility in the female.
   a. Pyosalpinx (usually Neisserian).
   b. Cervicitis, usually jelly-like in character which acts as a plug and prevents the spermatozoa from entering the cervix.
   c. Malformation, infantile uterus and disturbances of the glands of internal secretion particularly the anterior pituitary and ovaries.

Too often the physician will make a diagnosis of sterility without a complete examination of both partners. The couple themselves know that sterility exists, and it is expected of the up-to-date clinician to determine whether the male or the female is at fault, or both.

Examination of the spermatozoa should be done first by the "Huhner Test", which is very simple. The patient is ordered to the office as soon after coitus as possible (without a douche). She is placed in the ordinary gynecological position and with a bivalve speculum the cervix is brought into view. Then a pipette with a rubber bulb for suction or a connection with a syringe is placed in the cervical os, some of the cervical contents aspirated and immediately placed on a slide for a microscopical examination.

The finding of numerous live spermatozoa gives us the information that there is no sterliity as far as the male partner is concerned, but when we find only dead spermatozoa in the examination then we request a condom specimen; if we find only dead spermatozoa we know that the fault is with the male partner; if, however, live ones are found in the condom specimen then we look for the possibilities that the vaginal secretions of the female killed the spermatozoa, and we try to correct it.

THE AUTHOR

Dr. Copeland, graduated Chicago College of Medicine and Surgery; staff member Ohio Valley General Hospital, Wheeling; served as first lieutenant in World War I.

When sterility of the male is due to a Neisserian infection there is very little we can do about it. We hope, by shortening the duration of the disease with the chemotherapeutic agents on hand today and the general tendency on the part of the physician to stop the maltreatment of the urethra with irrigations and local astringents, the percentage of sterility in the male due to the gonococcus will practically disappear.

Diseases associated with the normal constitutional balance may at times produce sterility. Notable among such diseases are mumps with orchitis, extragenital tuberculosis and syphilis. X-ray exposure may also be a cause of sterility. Dietary deficiencies, worry and overwork may also be contributory factors. Very often by improving the general health of the individual, by gaining the confidence of the patient, then taking time enough to explain to him the possibilities that under proper treatment the spermatozoa which apparently are inactive now, may develop activity.

According to Browne,[1] the use of testosterone is of great benefit in cases of complete

loss of libido and orgasm with very poor erection and practically no fluid on ejaculation, and after several months of treatments, 10 mgm. twice a week (injection) the patient improved. In other cases upon examination of the semen very few spermatozoa were found and any seen were exceedingly small, immature and without tails. After four weeks of treatment by intramuscular injection of 10 mgm. of both proviron and testoviron twice a week, he found no active but well developed sperm cells. Following the treatments for another four weeks, active normal spermatozoa were found. I think the use of oreton or similar products is superior to the old androsterone.

LOSS OF PITUITARY STIMULATION

According to Thomas,[2] a complete loss of pituitary stimulation upon the testis will result in a complete absence of spermatozoa, and it is possible that lesser disturbances may be sufficient to cause either a decreased number of sperm or else abnormalties in sperm morphology. Normally, the volume ejaculated ranges from four to ten cc. and contains four to five hundred million spermatozoa.

Burns[3] states that at least 80 per cent of the sperm cells should be normal. If more than 20 per cent of the spermatozoa are abnormal, sterility is the result; or, if pregnancy does occur, it will end in miscarriage. The reaction is alkaline, the P H ranging between 7.7 and 8.5.

Epispadias and hypospadias may be corrected surgically.

In salpingitis improvement may be accomplished by giving large doses of follicular hormones. In salpingography the growth of the tube may be demonstrated by a marked proliferation of the mucous membrane, especially the superficial epithelium resembling a fresh regeneration and a marked hyperemia.

The undeveloped or infantile uterus is considered an endocrine problem and is treated accordingly.

While the number of cases of artificial insemination in the treatment of so-called sterility in my own practice is small, out of eleven cases, I have had five normal pregnancies, one miscarriage and five failures.

CASE REPORTS

Case 1.—Mrs. B. J., white, age 24, came in March, 1928, with a history of sterility. She was then married for six years, never used contraceptives and wanted to know the chances of raising a family. The history of her sexual development from childhood to puberty and from puberty to date was negative, with the exception of a dysmenorrhea for the first two days. She was a well developed woman, average build, blood, blood pressure and urinalysis were normal. Vaginal examination revealed normal secretions. Stenosis of the cervix with a gelatinous plug was present. I advised a dilatation and curettage which the patient refused. Then I requested a fresh specimen of the spermatozoa (with use of a condom). I instructed the patient to be back in six days (that was eleven days after her last menstruation). Following the next visit, after examining the content of the condom and finding that the number and motility of the spermatozoa were good enough for artificial insemination, I proceeded to do so without telling the patient what was taking place, merely explaining that it would be necessary to treat the cervix for stenosis. The results were gratifying. The patient reported in the office five weeks later with positive symptoms of pregnancy.

Case 2.—Mrs. J. B., white, age 29, came in June, 1935. She was married for ten years and had never used contraceptives. Past and present history were negative. Sexual life had been normal with the exception that she did not begin to menstruate until she was 17 years of age, with severe cramps (dysmenorrhea) the two days immediately preceding her menstruation. She had been having some discomfort for several hours before the beginning of menstruation but she could go about and do her work. Examination of the patient revealed an elongated cervix with a very small opening. I advised a dilatation and curettage which was done about a month later. About seven months later she reported that while her menstruation was perfectly normal now, she was still unable to conceive, and she wanted to know if anything else could be done to help her in that respect. I advised artificial insemination and for her to consult with her husband about it. Artificial insemination was

done twice in the first month on the 11th and 15th postmenstrual days and twice in the second month, the 12th and 16th postmenstrual days, after which normal pregnancy took place.

Case 3.—Mrs. T. S., white, age 28, married for seven years. Came in October, 1936, and had never used contraceptives. When she was married her weight was 118 and now she has gradually gained until her weight at the time of the examination was 196 pounds. Past and present history was negative with the exception that for the past two years her menstruation lasted only three days intsead of five and the flow of blood was somewhat diminished. A gynecological examination did not reveal anything abnormal except a slight retroflexion of the uterus. Later a Huhner test was made and showed enough active sperm cells. A basal metabolism test was -16. The patient was started on thyroid three grs. a day and estrogenic injections of 10,000 units once a week. This form of treatment continued for three months and the patient lost 22½ pounds. Treatment was continued with the addition of artificial insemination which was done the first month on the 12th and 14th postmenstrual days, 13th and 15th of the second month and 10th and 12th postmenstrual days the third month after which normal pregnancy developed.

Case 4.—Mrs. H. D., white, age 29, married 12 years. Came in February, 1940. Past and present histories were negative except for a leucorrhea of six years duration. She was 5 feet 5½ inches tall and weighed 102 pounds. Urinalysis was negative. The blood picture was hemoglobin 85 per cent, red cells 3,700,000. The Huhner test did not show any spermatozoa. A condom specimen when examined the following week was found to be perfectly normal. Treatments were then instituted to clear up the leucorrhea, of which a microscopical examination was made and proved to be streptococcic with some degenerated epithelium. A general tonic of liver extract and vitamins was given and the following month artificial insemination was started on the 10th and 12th postmenstrual days and the 8th and 10th postmenstrual days the following month after which normal pregnancy followed.

Case 5.—Mrs. R. R., white, age 23, married 3 years. Came in September, 1940, for treatment of sterility. Past and present histories were negative with the exception of dysmenorrhea which had existed for ten years. The following week a Huhner test was made and I found complete absence of sperm cells while a condom specimen three days later was found to be perfectly normal. Due to the dysmenorrhea and a stenosis of the cervix I ordered a dilatation and curettage which was done that week. Three months later in January, 1941 I discovered the existence of a hypospadiac condition in the husband and I advised artificial insemination which was done January 29, 1941 following which normal pregnancy took place. That was on the tenth postmenstrual day.

Case 6.—Mrs. O. B., white, age 30, married three years. She had been married before and had had three children during that wedlock. The second husband was anxious to have a child of his own. Examination of the male sperm cells showed a decrease in number of spermatozoa. They were both given glandular therapy and after thirty days artificial insemination was done on the 10th and 12th postmenstrual days and pregnancy followed with an abortion seven weeks later.

Five other patients were treated with aritficial insemination between 1937 and 1943 with failures. The number of inseminations varied between two and eight. I believe that most cases did not receive treatment long enough and that may account for the high percentage of failures.

BIBLIOGRAPHY

1. Browne. O'Donel: *Treatment of Male Sterility*, Irish Journal of Medical Science. p. 618. (August, 1939).

2. Thomas. E. Perry: *Sterility from the Viewpoint of the Endocrinologist*. So. Med. Jour.. 33:744. July, 1940.

3. Burns. Edgar: *Sterility from the Viewpoint of the Urologist*. So. Med. Jour.. 33:740. July. 1940.

RELAXATION WITHOUT VACATION

We cannot advise, "Take it easy;" that, of course, is out of the question, but each individual physician can by the exercise of a little ingenuity take many short cuts in his daily stint, and in so doing avoid many of the irritating moments that, added together, are courting disaster in the days to come. If we could learn to relax and carry out that relaxation several times daily, the phrase "death due to coronary disease" would be much less common in our medical journals.—*Journal of the Indiana State Medical Association.*

ACUTE POLIOMYELITIS AND THE PUBLIC HEALTH REGULATIONS

By H. A. SWART, M. D.
Charleston, West Virginia

It is in late summer and early fall that acute anterior poliomyelitis is most prevalent. The disease is endemic, isolated cases appearing in widely separated places, and at times it becomes epidemic as in 1940 when there were approximately 500 cases in West Virginia.

Before the advent of the Kenny method of treatment, splints were applied in an attempt to prevent deformities but aside from this little else was done. It did not matter where the patient was treated as splints could be applied under any conditions. Since it has been so clearly shown that the Kenny method is much superior to that previously used, it is obvious that this is the treatment of choice in all acute cases. This method has its greatest value when employed in the first few days of the disease. It is then that the affected muscles, if properly treated by the warm blankets, can, in so many instances, be restored to normal.

The present regulation of the Public Health Service in this state is that after the diagnosis is made, no person with acute poliomyelitis may be moved for two weeks—the so-called incubation period. Under our present law, therefore, it is impossible to move persons afflicted with infantile paralysis from their homes or from hospitals to which they are taken at first, to treatment centers where the Kenny method may be carried out.

At present there are only a few physiotherapeutists and nurses in the state of West Virginia who have been trained to carry out the Kenny technique. This mode of treatment requires several months of concentrated study and practice. Since the theory is not easy to understand, it can be seen why such a comparatively small number of people have as yet been well enough trained to carry out the treatment adequately, yet the results of this treatment in early cases and in some late cases are so much better than those in cases treated by the older methods, that there is no comparison.

The law regarding the two weeks' quarantine period should be immediately changed in order to permit the removal of persons attacked by poliomyelitis to hospitals where the Kenny method of treatment can be applied at the earliest possible moment. Isolation technique can be easily carried out at the same time the Kenny method is carried on. When started early, in many cases the hot pack treatment may be discontinued when the period of quarantine is over.

If the Kenny method could be instituted in all cases of poliomyelitis as soon as the diagnosis is made, certainly the serious crippling, which so often resulted in the past, could be largely prevented and at least some of the few who go on to death because of involvement of the muscles of respiration, could be saved for useful lives.

THE AUTHOR

Dr. Swart, graduated University of Toronto; six years Mayo Clinic, Orthopedic Surgery; American Association of Orthopedic Surgeons; Clinical Orthopedic Society; American Academy of Orthopedic Surgeons; resident staffs: Charleston General Hospital and Milton Memorial Hospital; now major in medical corps of the Army of the United States.

GUIDED BY A STAR

The future of our country and of the world seems none too bright, but therein lies a challenge to the brave and self-reliant, who, somehow, always find the way. Wiser men than you and I have been guided by a star. On the darkest night one can best see the stars.—W. B. Russ, M. D., in *Texas State Journal of Medicine.*

Tuberculosis Abstracts

Furnished Through the Courtesy of the West Virginia Tuberculosis Association

Until recently, primary carcinoma of the lung was regarded as a relatively rare type of cancer. We are now recognizing that it is one of the commonest forms of neoplasm. It has been discovered that around 10 per cent of all cancers originate in the lung, that this organ is surpassed only by the stomach as the most frequent site of beginning malignancy, and that approximately 15,000 Americans succumb annually to carcinomata that arise from lung structures, usually in the bronchi. Such stark statistics and the demonstrated fact that cancer of the lung, like pulmonary tuberculosis, can be found early by employment of readily available diagnostic facilities, provide all physicians with food for thought as they evaluate the chest complaints presented by patients, especially men, and particularly those past 40 years of age.

Cancer of the Lung—A Growing Problem

There is a masquerading lung disease which often gives quarter for a short time before the fatal issue and whose actions, in many ways, may simulate those of tuberculosis.

Both diseases are unique for they masquerade as other acute or chronic conditions of the lung. In neither are symptoms reliable in the early stages. Both diseases are marked by a lack of early reliable physical signs. Both are unique since in the early stages a single x-ray film will usually show some abnormality. Again, they ape one another because in spite of obscure clinical factors the diagnosis can be accurately made in a high percentage of cases. Lastly, there is a similarity between tuberculosis and this masquerading disease, cancer of the lung, as successful treatment depends to such a large degree upon early discovery.

However, the two diseases are different as regards the predominant age groups affected. Tuberculosis concerns principally the age groups between 15 and 40, whereas lung cancer usually affects those between the ages of 40 and 65. The diseases are totally different in respect to the matter of time. In tuberculosis, time plus rest is often a useful ally of the patient in regaining health. In cancer of the lung the element of time is always an enemy of the patient. Prolonged observation and rest treatment never improve the situation, but rob the patient of his only chance for possible cure.

In 165 cases of lung cancer it was found that they first consulted a doctor because of symptoms usually associated with almost any chronic chest condition. A review of these symptoms suggests it would be impossible to set apart any group of complaints that could be regarded as pathognomonic of pulmonary malignancy. Nevertheless, 82 per cent of all patients reported chronic cough, while no less than 92 per cent had as a first symptom something that called for attention to be directed to the chest when first the physician was consulted. Besides cough, other common symptoms included chest pain, chills and fever, hemoptysis, dyspnea, loss of weight and weakness.

Reviewing the physical signs elicited it is again impossible to outline a specific and significant grouping any more suggestive of cancer than of other chronic pulmonary conditions. Cases examined in the early stages often presented no physical signs. When present, the signs were of considerable variety and frequently misleading. They included evidence of congestion, consolidation, fluid, localized emphysema, cavitation, bronchial obstruction, mediastinal shift and other phenomena varying with the case, thus emphasizing the unreliability of simple physical signs in the differential diagnosis of this condition.

Of the 165 cases, 104 (63 per cent) were incorrectly diagnosed by the first doctor consulted. In view of the confused picture of misleading symptoms and physical finding, perhaps this majority in favor of error is not completely surprising, but the sobering thought emerges that treatment based upon an erroneous diagnosis was maintained for long periods of time, aimed at such supposed conditions as tuberculosis, 40 cases; unresolved pneumonia, 18 cases; lung abscess, 13 cases; bronchitis, 11 cases; asthma, 5; heart disease, 4; pleurisy, 4; metastatic tumors, 2; and miscellaneous, 9 cases. Most notable fact was the high frequency of false diagnoses of tuberculosis.

Unfortunately, lung cancer was not unmasked in far too many cases until long after the patient first visited a physician. It was possible in 125 case histories to determine how speedily a verified diagnosis was reached. Two facts stood out boldly. First, 36 per cent of the patients placed themselves under medical supervision at onset or within one month of the onset of symptoms. Second, the average patient consulted a doctor within three months of onset but did not receive benefit of a chest x-ray for an additional three months. The true diagnosis

(Continued on page xxx)

The President's Page

"This Is My Song"

In this, my last presidential message to the members of the West Virginia State Medical Association, I wish to express to each of you deep appreciation for the wholehearted support you have given me during my tenure of office. Your genuine loyalty, and your support of a far-reaching program that was inaugurated early this year, has been most gratifying. By this support, you have made a real contribution to our all-out effort to save the medical profession from regimentation.

Notwithstanding the tremendous and painstaking work that has been done by your officers and committees in furthering this program, I would remind you that the real battle is still to be fought. The outcome depends upon you.

Our Fact Finding and Planning Committee, after a most careful study, has presented a program that offers protection to the physician as well as to the patient. This program, if adopted unanimously by our profession, should forestall regimentation of the doctor. The success of this worthwhile and urgently needed program depends upon whether or not you are willing to let a few selfish individuals, who perhaps are misfits and cannot compete with other physicians in the practice of medicine, defeat a reform that obviously will benefit a very large majority of the doctors and at the same time fulfill our responsibility to the public by offering medical and hospital protection on a prepayment basis.

An army must reckon with many factors if it is to emerge victorious from battle. Leadership certainly plays a dominant rôle. In this connection, the members of the West Virginia State Medical Association are to be congratulated upon having Bob Reed for their leader next year. He is experienced in the affairs of our Association and is imbued with a courage that assures for us a militant leadership, a leadership that will perhaps be needed more in the days that lie ahead than ever before in the history of our Association. In passing the mantle of this honorable office to my distinguished successor, I would remind him that the final outcome of the battle of tomorrow depends upon his army of loyal followers. To you in the ranks, I urge that you accord to Bob Reed the same wholehearted support that you most graciously have given me.

In bringing this year's work to a close, I extend to you and yours, all good wishes for the Yuletide season and express the sincere hope that the New Year will bring Peace and Happiness to mankind.

President.

West Virginia Medical Journal

Official Journal of
The West Virginia State Medical Association
302 Atlas Bldg., Charleston, West Va.

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Published monthly on the first day of the month, at Charleston, by The West Virginia State Medical Association.

Original articles are accepted on condition that they are contributed exclusively to the Journal.

Advertising rates furnished upon request. All advertisements must conform to the standard established by the Council of Pharmacy and Chemistry of the American Medical Association.

Address all communications to Business Manager, West Virginia Medical Journal, Box 1031, Charleston, West Va. Phone, Capitol 34-625.

SUBSCRIPTION $3.50 PER YEAR

Entered as second-class matter, January 1, 1926. Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917. Authorized July 24, 1919.

GROUP PRACTICE

By this time the report of our Fact Finding Committee has been read by most of our members. It is universally agreed that, all things considered, the scope of the report is all that could have been expected. The committee has met and adequately dealt with the most onerous problem in medical care—the unexpected and hospital-confining illness. As was said in a recent radio debate on the cost of medical care: this is meeting first things first. Prepayment hospital insurance is perhaps the one thing that organized medicine can universally adopt to aid the low income group in getting better, more adequate medical service.

There is another group of patients who also merit much consideration: that group of patients who wander from office to office suffering from something that is not entirely disabling and necessitating hospitalization but who find themselves in spite of numerous consultations "getting no better fast." These are the so-called chronics. They go to the general practitioner and are referred to the eye, ear, nose and throat men, to the urologist, to the orthopedist, to the radiologist, etc. The cost of these different examinations mounts high. The investigations and treatments of the various specialists are uncoordinated, costly and inefficient.

All in all, it is possible that the financial and economical burden on these people is as great if not greater than that of the group which requires hospitalization. We venture to suggest that the organization of diagnostic group clinics in the various communities would supply these patients with more efficient and less expensive medical care and might perhaps increase rather than decrease the doctor's income. The general practitioner has nothing to lose and much to gain from such groups. In theory, most doctors agree to the feasibility of group practice. Why it is not more universally employed is somewhat of a mystery. All doctors on hospital staffs and all doctors in the armed services are practicing group medicine. It remains to be seen how long medicine, as practiced today, can escape the logic of group practice.

PINTA REPORTED IN UNITED STATES

Three cases of pinta, a nonvenereal type of spirochetosis limited almost exclusively to the dark races, are the subject of a report by E. P. Lieberthal, M. D., in *The Journal of the American Medical Association* for November 6. This is the first time the disease has ever been reported in continental United States, although there is no reason, the author says, why the disease should be limited to any country or even to the tropics. In all probability there are in the southern part of the United States persons with pinta which has been diagnosed as some other type of skin disease. The 3 patients he reports were born in Canada, Louisiana and Alabama.

There are three stages of the disease—in the late stage the complications include high blood pressure and lesions of the heart and blood vessels. An attack confers immunity and no case has been reported in which pinta was of venereal origin. Treatment is similar to that of syphilis—by arsenical preparations.

TO THE PRESIDENT

In the selection of Mrs. John P. Helmick, of Fairmont, as president, the members of the Woman's Auxiliary to the Southern Medical Association displayed keen foresight and excellent judgment. Installed in office at the annual meeting in Cincinnati, November 16-18, she lost no time in entering actively upon her new duties.

We have the utmost confidence in Mrs. Helmick's ability to mold the Auxiliary into one of the most efficient organizations of its kind in America. She is capable and energetic

Mrs. John P. Helmick

and possesses all the qualifications necessary to the successful conduct of the affairs of the office. Her experience, not only as a worker in the ranks of the Auxiliary to the S. M. A., but as president of the Woman's Auxiliary to the West Virginia State Medical Association, will aid her in the important work ahead.

The JOURNAL extends heartiest congratulations to the Auxiliary and best wishes to Mrs. Helmick for a successful term.

WRITE!!

"Boy, was I happy to get that nice long letter from you. That is why I am answering it right away. I wish some of those docs over there would realize how we appreciate news from home." The above was taken verbatim from a letter received from an Asiatic station from one of our members now located, as he says, "right smack in the middle of this country and there isn't a God's thing for miles around."

Most of us at some time or other in our lives, have been lonesome and wondering what those whom we left behind were doing —how they were getting along. It is no great strain on the imagination of anyone to realize how our fellow practitioners on duty abroad or at home want to know the news and the gossip and not, as another correspondent put it, "the stuff that appears in the newspapers." It is true that all doctors are busy. It is also true that every doctor has a friend or an associate somewhere in the service and sometime between patients or calls there are a few minutes in which a personal note to that temporarily dislocated friend or associate might be written.

Primarily, to write is a duty but even beyond that there comes the satisfaction of knowing that the letter brings encouragement to the recipient, makes him feel that the home ties are still binding, and who can tell what postwar friendships are going to result? Let us all make the resolve to write regularly and often.

D-P RELATIONS IN GAY NINETIES

In its "Fifty Years Ago" column, the *Greenbrier Independent*, in the issue dated November 9, reproduces this news item of an interesting doctor-patient development in Charleston during the "Gay Nineties": The physicians at Charleston formed a protective association and will not attend a person who does not pay his bill. A number of citizens formed another protective association according to the Chinese rule, "No cure, no pay."

THE STATE PRESS AND S. 1161

Editorials have appeared recently in several West Virginia newspapers with reference to the Wagner-Murray bill to amend the Social Security Act. In all of these editorials, a word of warning is sounded and protests made against the passage of the bill.

A few weeks ago, the Communist party in West Virginia circularized certain areas in the southern section of the state, taking the Kanawha Medical Society to task for advocating the defeat of the bill, which, it avers, "is being maliciously attacked by Tory doctors." Calvert Estill, Charleston correspondent for the Ogden newspapers, observes that "The West Virginia Communists reserve to themselves the right to fight for the bill, but they decry the efforts of far-seeing medical men who are opposing it the same right. And that, of course, is typical of the Communist party. Doctors in this state * * * are opposing the Wagner bill because it is as un-American as the Communist party which supports it. They are not opposed to social security now, nor have they been opposed to it in the past. They don't want to become automatons of a bureaucratic government. They want to continue serving the public as they always have with steadily improved service."

The *Weston Independent* terms the measure "just another step in the totalitarian government theory of cradle-to-the-grave domination of the individual," and follows with the observation that "if the bill becomes law the Surgeon General of the Public Health Service will have the expenditure of some $3,000,000,000 annually, which sum would, in reality, be nothing more nor less than $3,000,000,000 of new taxes for a system of socialized medicine to displace the present American medical system which has developed the most effective and the most widely distributed medical care ever provided for any comparable number of people anywhere at any time."

From the viewpoint of the layman, the *Elkins Inter-Mountain* can see at least two strikes on the proposed federal control of our medical system before it gains much headway in Congress. "First," it says, "no head of an American family would countenance a physician other than his own choice to minister his afflictions unless by compulsion. Second, the attending physician under government direction would be totally devoid of responsibility. The fate of socialized medical supervision is up to Congress. Were it submitted to a national referendum, it would be so repudiated by the people of the United States it would not be heard of again in a half dozen generations."

According to the *Weirton Daily Times*, it is hard to believe that the citizens of that section of the state will ever approve any scheme which would turn over our medical system to federal politicians. The following is part of an editorial appearing in a recent issue: "While the attention of the people is directed almost entirely upon the progress and procedures of the war, there are numerous measures of far-reaching internal policy being quietly promoted by theorists who are trying to maintain centralized government in the postwar era. While the collective American mind has been held by the ups and downs in the European theater, a bill providing for socialized medicine has been slipped into the Senate Council couched in the most humanitarian phrases. The measure has one purpose, to abolish private medical practice and establish nation-wide medical controls in Washington where politicians would have a new and expensive toy to play with."

The *Wheeling Intelligencer* thinks that the bill should be rejected in toto on principle. "There is something alluring," it says, " in the prospect of medical care being provided by society as police and fire protection are. But those who look longingly toward such service as something for nothing would do well to peer a bit beneath the surface. It has been the history of governmental activity that any excursion of government into the realm of private practice invariably placed an added

burden of expense upon the people. And any government job is not only more expensive, but less efficient. Inevitably, medical service would sink to a level of mediocrity with the incentives of the private practice system removed, and in the end the people would have saddled upon them a much greater burden of expense." * * *

"Medicated political candy," is what the *Fairmont West Virginian* calls the Wagner bill. "State medicine for the masses," is says, "will mean medical care by physicians who are politically amenable, rather than by those of superior abilities—for the doctor it will mean catering to ward committeemen, rather than the needs of human beings who are his patients. That will be the effect of an overdose of medicated political candy. And the people will pay a stiff price for it in the form of new taxes on wages, even though they think they are going to get something for nothing."

SCIENTIFIC EXHIBITS AT AMA MEETING

The Scientific Exhibit at the Chicago session of the American Medical Association, June 12-16, 1944, will be held at the Palmer House. Exhibits will cover all phases of medicine and the medical sciences with particular emphasis on graduate medical instruction for the physician in general practice.

Application blanks for space in the Scientific Exhibit are now available and may be obtained by communicating with the Director, Scientific Exhibit, American Medical Association, 535 N Dearborn Street, Chicago, 10, Illinois.

HEALTH OFFICERS APPOINTED

Dr. James E. Coleman, of Fayetteville, has been appointed by the Public Health Council as full-time health officer for Fayette County. The council has also confirmed the appointment of the following doctors as part-time health officers: Cairo, Dr. U. S. G. Ferrell; Elkins, Dr. H. K. Owens; Hinton, Dr. J. W. Stokes; Iaeger, Dr. J. K. Pickens; Kenova, Dr. Roscoe Stotts; Mill Creek, Dr. B. L. Liggett; Milton, Dr F. F. Farnsworth; Ranson, Dr. G. P. Morison; Mineral County, Dr. James A. Newcome; and, Pendleton County, Dr. O. F. Mitchell.

General News

OVER 100 WEST VIRGINIA DOCTORS ATTEND ANNUAL MEETING OF S.M.A.

The annual three-day meeting of the Southern Medical Association closed at Cincinnati, November 18, with a record of having presented full scientific programs before what were probably the best attended sessions in its thirty-seven years of existence.

Prominent speakers covered subjects interesting to surgeons, general practitioners, and specialists in all the various fields of medicine. It was noticed that war surgery and war medicine crept into discussions even when the subject assigned concerned matters affecting only civilian practice. Such subjects as the evacuation of casualties, treatment for malaria and the dysenteries, and surgery and rehabilitation were discussed by men high in the ranks of the Army, Navy, and Public Health Service.

Brigadier General Fred W. Rankin, consultant in surgery, attached to the staff of the Major General Norman T. Kirk, Surgeon General of the Army, was emphatic in the statement that the sulfa drugs had contributed largely to the success of Army surgeons, indicating that oral administration is preferable to injections. General Rankin, just recently returned from a trip to all the battlefronts of the world, stated that no single therapeutic agent had saved as many lives as blood plasma. He expressed the opinion that more should be given to wounded men in the front lines.

The doctors were told by General Kirk that the Army had taken over or built 59 general hospitals in this country with a capacity of from 1,000 to 3,000 beds each, and that the beds available at this time total 300,000. In addition, he stated that hospital facilities will be provided for from eight to ten per cent of the forces overseas. Commenting upon the fact that most of the general hospitals are located in the south, General Kirk made it clear that every effort would be made nevertheless to hospitalize returned wounded soldiers as close to their homes as possible.

The seventy technical exhibits and all of the scientific exhibits and motion pictures were located on one floor of the Netherland Plaza. The layout was perfect from the standpoint of both the doctors and the exhibitors. The scientific sessions were con-

ducted with clocklike precision, being opened and closed pursuant to schedule.

New officers were elected as follows: President, Dr. Edgar G. Ballenger, Atlanta; vice president, Dr. James A. Ryan, Covington, Kentucky; chairman of board of trustees, Dr. J. W. Jervey, Greenville, S. C., and chairman of the council, Dr. Marion C. Pruitt, Atlanta. Dr. Ray M. Bobbitt, of Huntington, is a holdover member of the council. The total registration of doctors was 1,574, as compared with 1,286 at the meeting in Richmond in 1942.

There was a total registration of 102 doctors from West Virginia, as compared with 55 doctors at the Richmond meeting last year. The following is the complete registration from West Virginia, as compiled November 17 and 18 at Cincinnati:

A. E. Amick, Charleston; R. L. Anderson, Charleston; T. M. Barber, Charleston; J. F. Barker, Huntington; Don S. Benson, Moundsville; W. P. Black, Charleston; Thomas H. Blake, St. Albans; James R. Bloss, Huntington; Ray M. Bobbitt, Huntington; Lt. Col. S. S. Bobes, Wheeling; Ralph H. Boice, Parkersburg; L. F. Boland, Williamson.

James M. Bonnar, Fairmont; John J. Brandabur, Huntington; I. E. Buff, Charleston; Lenore Patrick Chipman, Charleston; Roger E. Clapham, Martinsburg; Carl T. Clark, Iaeger; D. J. Cronin, Huntington; Hokie H. Fisher, Dunbar; Thomas G. Folsom, Huntington; Cole D. Genge, Huntington; Paul R. Gerhardt, Charleston; Milton A. Gilmore, Parkersburg.

D. E. Greeneltch, Wheeling; Forest G. Harper, West Union; H. C. Hays, Williamson; George P. Heffner, Charleston; John P. Helmick, Fairmont; E. B. Henson, Charleston; Wm. D. Hereford, Huntington; N. F. Hines, Huntington; Frank C. Hodges, Huntington; Chas. A. Hoffman, Huntington.

W. E. Hoffman, Charleston; Frederick J. Hoitash, Huntington; Emmett W. Horton, Bluefield; D. L. Hosmer, Bluefield; Harold H. Howell, Madison; A. P. Hudgins, Charleston; H. D. Ireland, Hopemont; G. G. Irwin, Charleston; K. M. Jarrell, Beckley; C. F. Jaskiewicz, Huntington; George D. Jeffers, Parkersburg; Capt. Julian R. Kaufman, MC, Camp Rucker, Ala., (Charleston); K. J. Khorizian, Pineville; Lt. Col. L. Rush Lambert, MC, Charleston.

J. W. Lyons, Holden; Wm. K. Mackay, Huntington; Henrietta L. Marquis, Beckley; George R. Maxwell, Morgantown; A. W. Milhoan, Nitro; George R. Miller, Fairview; Roy Ben Miller, Parkersburg; Dana C. Mitchell, Jr., Bluefield; T. W. Moore, Huntington; Karl J. Myers, Philippi; C. F. McClintic, Williamsburg; U. G. McClure, Charleston; Wm. A. McMillan, Charleston.

L. J. Moore, Huntington; M. B. Moore, Huntington; Thomas W. Nale, Charleston; Leonard E. Neal, Clarksburg; Wm. E. Neal, Huntington; J. E. Offner, Charleston; Warren J. Parsons, Huntington; Edward N. Pell, Wheeling; Cecil O. Post, Clarksburg; Albert M. Price, Charleston; Gilbert A. Ratcliff, Huntington; Thomas G. Reed, Charleston; C. J. Reynolds, Bluefield.

Lonzo O. Rose, Parkersburg; D. McN. Ryan, Hinton; David E. Sauer, Kingwood; Charles Scott, Bluefield; Clare F. Shafer, Grafton; Charles Earl Smith, Terra Alta; Grover A. Smith, Montgomery; F. F. Sowers, Fairmont; Charles T. St. Clair, Bluefield; Richard J. Stevens, Huntington; Sara L. Cockrell Stevens, Huntington; W. C. Swann, Huntington.

R. B. Talbott, Martinsburg; H. V. Thomas, Clarksburg; James Thompson, Morgantown; Eldon B. Tucker, Morgantown; Jesse R. Tuckwiller, Fairmont; Walter E. Vest, Huntington; Walter E. Vest, Jr., Huntington; Arthur John Viehman, Hopemont; Major Howard G. Weiler, Chanute Field, Ill., (Wheeling); Wm. A. Welton, Fairmont; R. J. Wilkinson, Huntington; Chauncey B. Wright, Huntington; Robert M. Wylie, Huntington; Charles G. Willis, Huntington; John W. Yost, Williamson.

AMERICAN THERAPEUTIC SOCIETY

The 44th annual meeting of the American Therapeutic Society was held at Cincinnati, November 15 and 16, with Dr. Walter E. Vest, of Huntington, presiding as president. The program was limited to discussions concerning the treatment of disease. Doctor Vest delivered the principal address at the annual banquet at the Netherland Plaza, his subject being, "William Shakespeare, Therapeutist."

Dr. William V. Watson, of Toronto, Ontario, was elected president to succeed Dr. Vest. Dr. Oscar B. Hunter of Washington, was reelected secretary.

ANOTHER DOCTOR COMMISSIONED

Dr. William Carroll Boggs, of Wheeling, who has spent the past year and a half in the study of dermatology and syphilology with Dr. Howard Phillips in that city, has been commissioned a first lieutenant in the Army and will report for duty at Carlisle Barracks, Pa., early in December.

A.M.A. HOST TO SECRETARIES AND EDITORS AT CHICAGO MEETING

The war played a dominant rôle at the Annual Conference of Secretaries and Editors of constituent state medical associations at Chicago, November 19-20. The conference was sponsored by the American Medical Association.

The part that is being played by state associations in the work of the Procurement and Assignment Service was discussed by Dr. James E. Paullin, president of the American Medical Association, who is a member of the directing board; Dr. Harold S. Diehl, member of the board, and Commander Max Lapham, executive officer of the P. & A. Service.

The important 9-9-9 program affecting interns and residents was considered at length. It was made clear that there will be no increase permitted in the number of interns allotted to hospitals. In instances where necessity is apparent therefor, increase will be granted in the number of residents approved for service in hospitals. However, it was reiterated that not more than fifty per cent of the residents assigned to any one hospital can be drawn from doctors who are qualified for military service. Graduates of Class B schools will not be commissioned.

Doctor Paullin brought out the fact that the new Postwar Planning Committee, headed by Dr. Irvin Abell of Louisville, and including Dr. Olin West, secretary of the American Medical Association, is already at work making a study of the things that will affect doctors when the war is over. It was suggested that a similar committee be set up in each state to cooperate with the national committee.

According to Major General George F. Lull, deputy surgeon general of the Army, the men in the Army are getting better medical care than they had back home. He said that the mortality rate in the Tunisian campaign was two and one-half to three per cent, compared with nine per cent in World War I. General Lull further stated that the Army still needs from five to seven thousand doctors in addition to interns being commissioned in regular order. There is need for a total of forty-eight to forty-nine thousand doctors.

Hospital training of medical graduates was discussed by Dr. Victor Johnson, secretary of the A. M. A. Council on Medical Education and Hospitals, and an interesting report of the War Participation Committee was made by Dr. Walter F. Donaldson, of Pittsburgh, chairman.

At a dinner meeting held on November 19, there was a roundtable discussion of the work of the Cooperative Medical Advertising Bureau, an organization embracing 35 state medical journals. In addition, Dr. Austin E. Smith, secretary of the A. M. A. Council on Pharmacy and Chemistry, reported at length on the work of the Council.

The final session held November 20 was devoted to consideration of medical legislation in Congress and regulations in connection with the new Emergency Maternity and Infant Care program.

Mr. J. W. Holloway, director of the Council on Legal Medicine and Legislation, ably discussed the situation with reference to the proposed Wagner-Murray bill. He stressed the importance of maintaining contact with members of both branches of Congress and continuing the educational campaign among lay groups.

The meeting was attended by Dr. G. G. Irwin, member of the JOURNAL Publication Committee; Dr. James R. Bloss, member of the Board of Trustees of the American Medical Association, and Charles Lively, executive secretary of the State Medical Association.

STATE P. & A. COMMITTEE MEETS

A special meeting of the State Procurement and Assignment Committee was held at Charleston, November 11, for the purpose of considering further the request of the War Manpower Commission for additional doctors for our armed forces. It is estimated that there is still need for between five and six thousand doctors.

The committee has asked all local Procurement and Assignment Committees to hold another meeting immediately to determine how many of the doctors remaining in civilian practice can be spared for service in the Army and Navy. The committees have been asked to submit the names of available doctors under 38 years of age without reference to previous classification.

The doctors who are declared available by their local committees will be invited to accept commissions. The War Manpower Commission has directed that the names of doctors who are declared available for military service and who refuse or fail to apply for commissions within sixty days after they are asked to do so, are to be certified to the State Director of Selective Service and to the Central Office of the Procurement and Assignment Service, at Washington, as having refused commissions.

COMMITTEES AGREE UPON BASIC CONTRACT FOR MEDICAL SERVICE

The provisions of a basic contract to be used by component societies has been agreed upon by the Central State Committee of the West Virginia State Medical Association and a group representing hospital service plans now operating in this state. Mimeographed copies of the contract have been sent to all component societies together with a letter of explanation from Drs. Ray M. Bobbitt, chairman; D. A. MacGregor, and R. O. Rogers, members of the Association committee.

No attempt was made by the committee to draft a contract that can be used in its entirety by county or area groups organized to provide medical service. Rather, the committee has presented only a suggested form that can be amended or corrected to meet local needs. It is brought out in the letter that a fee schedule that might suit one locality would have to be revised to meet conditions existing in another.

That the principle of private medical care upon a prepayment basis, as outlined in the report of the Fact Finding and Planning Committee and adopted by the Council, meets with general approval, is evidenced by the fact that already steps have been taken by several component societies to organize medical service plans which will be sponsored by doctors and administered by hospital service plans.

The experiment in West Virginia is being watched carefully by medical groups outside the state, and requests for copies of the basic contract as drawn have been received from several different parts of the country.

NEW FINANCIAL SECRETARY NAMED

Mrs. Gertrude H. Rowell, of Charleston, who has served as financial secretary of the West Virginia Tuberculosis and Health Association since 1920, has tendered her resignation. Mrs. Rowell, who is the widow of the late George C. Rowell, former executive secretary of the Association, will make her home with a daughter in Detroit. She is succeeded as financial secretary by Miss Gail White, who for several years was employed in the offices of the Department of Public Assistance at Charleston.

In no profession does culture count for so much as in medicine, and no man needs it more than the general practitioner.—Osler.

TB DEFINED AS CONTAGIOUS BY PHC AND SUBJECT TO QUARANTINE

The Public Health Council, cooperating with the federation of state licensing boards, has reduced the period of minimum internship required for licensure examination from 12 to 9 months. This action, taken at the fall meeting at Charleston, October 25-27, was held necessary in view of the adoption of the new 9-9-9 program affecting interns and residents.

The council, by resolution, declined to accept the recommendation of the Council of the West Virginia State Medical Association that temporary permits to practice medicine be granted for the duration to graduates of unrecognized schools in order that medical care might be provided in certain areas where a doctor shortage is found to exist. Previously, that body had specified that it should be made plain that any such permit granted would be revoked absolutely not later than six months after the cessation of hostilities. It was felt by the PHC that legal difficulties involved would render the successful operation of such a plan impossible.

The members expressed themselves in favor of requesting the U. S. Public Health Service to assign doctors to areas in the state where a shortage might exist if the emergency bill now pending in Congress, providing an appropriation for the purpose, is passed. (*Ed.*—The bill has since been reported to the House stripped of this provision).

The council, going on record as defining tuberculosis contagious and subject to quarantine, requested the board of control to take the necessary steps for the detention in the state tuberculosis sanitoria of refractory or rebellious patients. It was brought out at the meeting that a number of positive cases had already left one of the state institutions prematurely, and against the advice and without the consent of the members of the staff, to accept work in nearby defense plants. This action was taken by the council after the attorney general had ruled such a step legal.

HEALTH OFFICER RESIGNS

Dr. J. W. Davis, of Fairmont, who has served as health officer for Marion county for the past six years, has resigned to accept appointment as director of the bureau of communicable diseases of the city health department at Baltimore, Md. His resignation is effective December 18.

MORE APO AND FLEET P.O. NUMBERS

A few letters have been received by THE JOURNAL requesting that information be published concerning addresses of various hospital units stationed outside the continental United States. Under the Code of Wartime Practices, this cannot be done, but publication of A. P. O. and Fleet P. O. designations for members of the State Medical Association now serving overseas will continue. The following additional addresses have been received at the headquarters offices of the West Virginia State Medical Association:

Capt. William Allman, M. C.,
A. P. O. 464,
% Postmaster, New York, N. Y.
Lt. Col. Bert Bradford, Jr., M. C.,
A. P. O. 4916,
% Postmaster, New York, N. Y.
Major Harry A. Carney, M. C.,
A. P. O. 827,
% Postmaster, New Orleans, La.
Capt. John B. Haley, M. C.,
A. P. O. 464,
% Postmaster, New York, N. Y.
Lt. Col. Harold Jones, M. C.,
A. P. O. 464,
% Postmaster, New York, N. Y.
Lt. (jg) U. C. Lovejoy (MC), USNR,
% Fleet Post Office,
San Francisco, Cal.
Lt. Col. Robert Lukens, M. C.,
A. P. O. 464,
% Postmaster, New York, N. Y.
Major John F. McCuskey, M. C.,
A. P. O. 464,
% Postmaster, New York, N. Y.
Capt. Paul McCuskey, M. C.,
A. P. O. 464,
% Postmaster, New York, N. Y.

DIRECTORY OF MEDICAL SPECIALISTS

Announcement has been made that the Directory of Medical Specialists is now to be published by the A. N. Marquis Company of Chicago, publishers of "Who's Who in America." Previous editions have been published for the Advisory Board for Medical Specialties by the Columbia University Press of New York City.

The next edition will not be issued until 1945, but the A. N. Marquis Company will publish a supplemental list of all those who have been certified by the American Boards since the last (1942) edition of the directory. This is to be distributed at cost, and monthly or bimonthly bulletins listing successful candidates for certification at examinations during the additional interim before the next edition are to be issued as a subscribers' service.

Communications should be addressed to the Directing Editor, Directory of Medical Specialists, 919 North Michigan Avenue, Chicago, (11), Ill.

1944 AMA MEETING IN CHICAGO

The annual session of the American Medical Association in 1944, which had been scheduled to be held in St. Louis, has been changed by the Board of Trustees of the Association so that it will now be held in Chicago, June 12 to 16, *The Journal* of the Association announces in its November 6 issue. The change, according to the announcement, was necessary because of information received that it would not be possible for St. Louis to provide adequate hotel accommodations.

The meetings of the House of Delegates of the Association will be held at the Palmer House and the Scientific Exhibit will be installed in that hotel. The Technical Exhibit will be housed at the Stevens Hotel.

AMERICAN BOARD OF OPHTHALMOLOGY

The 1944 examinations of the American Board of Ophthalmology will be held in New York in June and in Chicago in October. The deadline for filing applications for the examination in New York is December 15, 1943, and for the examination in Chicago, April 1, 1944. Applications received after January 1, 1944, will be subject to the increased total fee of $75,000. Communications should be addressed to the Board at 6830 Waterman Avenue, St. Louis, Missouri.

RELOCATIONS

Dr. I. O. Wilson, who has engaged in the practice of medicine at Monongah for several years, has located at Van.

* * * *

Dr. L. L. Aultz, of Logan, has moved to Charleston.

* * * *

Dr. John B. Traul, of Chapmanville, has located for the practice of his profession at Princeton.

DR. VEST REELECTED PHC PRESIDENT

At the meeting of the Public Health Council in Charleston, October 26, Dr. Walter E. Vest, of Huntington, was reelected president for a fourth term. He has served continuously as president of the council since 1937.

JANUARY MEETING OF PHC

A meeting of the Public Health Council will be held in Charleston, January 3-5, 1944, for the purpose of examining applicants for licensure.

WITH DOCTORS IN THE SERVICE

Capt. Thos. L. Woodford, of Philippi, who has been attached to the 301st Med. Bn., at Camp A. P. Hill, Virginia, has been transferred to Camp McCoy, Wisconsin.

* * * *

Dr. Russell Kessel, of Charleston, who has been chief of surgery for the past two years at the U. S. Naval Hospital, at Quantico, has recently been promoted to the rank of commander.

* * * *

Dr. Robt. T. Bandi, of Wheeling, who is attached to the 385th Inf. Med. Det., at Camp McCoy, Wisconsin, has been promoted from first lieutenant to captain.

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Capt. John E. Echols, of Richwood, who has been serving as battalion surgeon with the 398th Inf., is on maneuvers somewhere in the south.

* * * *

Major Raymond A. Updike, of Montgomery, who is serving with our armed forces in India, writes that the climate is pleasant, with warm days and nights cool enough to warrant the use of blankets. His chief petty annoyance seems to be mosquitos. Reveille is at 5 A. M., tea is served at 6 A. M., breakfast between 8 and 9, lunch 1 to 2 P. M., tea at 5, and dinner from 8 to 9 P. M.

"We reside in brick quarters," he writes. "We have small single rooms, well equipped, and the field officers have a native bearer, 'Poonja' by name. It is quite amusing to see one of us taking a bath in a small tin tub with Poonja pouring hot and cold water over us to get the soap suds off." Major Updike writes very interestingly concerning a mission he visited, operated by Canadians. One woman physician and the superintendent of nurses have been there for 22 years, and an English physician for ten years. "These women are really doing a marvelous, sincere piece of work," he says, "and to my mind they personify everything that a real Christian should be. They are actually working with less equipment than I have stored at home."

* * * *

Capt. Eugene R. McNinch, of Weirton, who has been at Fort Dix, N. J., for several months, is now with the 4th Med. Bn., at Camp Gordon C. Johnston, Fla.

Dr. James Walker, of Charleston, son of the late Dr. Rome Walker, is now stationed with the army air force at Charleston, S. C. He was recently promoted from lieutenant to captain.

* * * *

Dr. Sobisca S. Hall, of Clarksburg, who is attached to the staff at the general hospital at Keesler Field, Biloxi, Miss., has been promoted to the rank of lieutenant colonel.

* * * *

That doctors in the service are viewing with alarm the fight that is being made for the passage of the Wagner-Murray bill (S. 1161) is evidenced by the contents of letters received on the subject. These doctors who are away from home are also interested in the proposed medical service plan that has been worked out by the Fact Finding and Planning Committee. The following letter from Major L. R. Ayers, of Beckley, who is attached to the 74th Tactical Ren. Group at Morris Field, Charlotte, N. C., is expressive of the attitude of doctors in the service with reference to these matters:

"I appreciate the problems that must be encountered in developing any plan for state-wide coverage of medical care. I also realize that any recommendations must be general in character. Local activities must be guided by local necessities. Naturally, I am unable to participate actively, but I sincerely hope that the physicians in the various areas back home will actively assist in working out the details of these plans. This is one period during which the attitude of 'let George do it' will result in many pitfalls.

"There are many of us who fear that apathy in the approaching years will surely be the downfall of our profession. May I add my 'two cents worth' to urge active interest in the guidance, *by doctors*, of any plans formulated. It may be possible that, correctly guided, these plans will preserve the old patient-doctor relationship and really benefit the needy."

* * * *

Lieutenant (jg) U. C. Lovejoy (MC), USNR, of Omar, is with the marines in the southwest Pacific. In his opinion, the CB's and the P-38's will win the war in that area. A great number of

the marines have suffered recurrent attacks of malaria during the ten months they have been in that particular place. "For many nights after our arrival," he writes, "we had to run for our fox holes several times a night, but there has not been a raid now for five nights. The P-38's are doing on excellent job."

* * * *

Capt. Harry E. Baldock, of Charleston, writes from Iran as follows: "We have a monthly staff meeting at our hospital now. I just gave a paper on malaria, which is quite important in this country. If I can write it up so that it will get by the Surgeon General, I may send it to you."

* * * *

Lt. Comdr. R. J. Condry (MC), USNR, of Elkins, who has been stationed in the Canal Zone for several months, is now attached to the U. S. Naval Hospital staff at Norfolk, Virginia.

* * * *

Capt. Julius L. Boiarsky, of Charleston, who has been attached to the 36th Portable Surgical Hospital at Camp Atterbury, Indiana, is now with the 1560th Service Unit Medical Section at the same base.

Lieutenant Charles M. Polan, of Huntington, is assistant chief of the EENT service at the station hospital, Air Transport Command Replacement Center, at Camp Luna, New Mexico.

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The Purple Heart has been awarded to Capt. John B. Haley, of Charleston, for wounds received while on active duty with our armed forces during the invasion of Sicily.

* * * *

Dr. Robt. S. Widmeyer, of Parkersburg, has been promoted to the rank of commander in the Navy, and is serving as senior medical officer at the U. S. Naval Air Station at Sanford, Florida. In a recent letter, he says "I certainly want to add my approval to the work being done in West Virginia against the Wagner bill. Keep it up!"

* * * *

Capt. James D. Brown, of Summersville, who was commissioned first lieutenant in May, 1942, has seen service in England and North Africa, and was with our forces in the invasion of Sicily, where he is now convalescing from the effects of malaria contracted early in the fall. Mrs. Brown, the former Evelyn Taylor, R. N., and their three children, are now residing in Romney.

A letter from Captain E. Newton DuPuy, of Beckley, from Italy, arrived here in sixteen days' time. His outfit participated in the Casablanca landing and went through the whole of the Tunisian campaign. He notes that, on October 30, he had been out of the U. S. for one year. He said that he was very proud of his outfit, which was also the first to land in Sicily, but "somehow or other they forgot us on the Italian invasion * * * but they made it just the same."

Obituaries

URIAH H. HANNAH, M. D.

Dr. Uriah H. Hannah, was born at Arbovale, Pocahontas County, West Virginia, in 1881. He graduated from the Medical College of Virginia, at Richmond in 1906, and received his license to practice the same year. Dr. Hannah was a member of the State Medical Association for a number of years. He located at Cass, West Virginia, as physician for the West Virginia Pulp and Paper Company, at which place he practiced his profession until his death on October 8, 1943.

Dr. Hannah was very active in the affairs of his county, serving as president of the county court for two terms and as president of the board of education for several terms. He was a member of the Masonic order, Phi Chi medical fraternity, and Phi Gamma Delta.

In 1907, Dr. Hannah married Miss Laura Bock, who survives, together with five daughters.

DR. FREDERICK F. HOLROYD

Dr. Frederick F. Holroyd, of Princeton, was born at Athens, West Virginia, September 20, 1885. He graduated from Concord State School in 1905 and received his M. D. at the University of Maryland College of Physicians and Surgeons in 1910.

During World War I, Dr. Holroyd served as Acting Assistant Surgeon, U. S. Public Health Service. He had been a member of the American Medical Association, West Virginia State Medical Association and the Mercer County Medical Society for many years.

Dr. Holroyd's son, Dr. Frank J. Holroyd, who is engaged in practice, practicing at Princeton, is a member of the Council of the State Medical Association.

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BOOK REVIEWS

NOTABLE CONTRIBUTORS TO THE KNOWLEDGE OF SYPHILIS—By HERMAN GOODMAN, B.S., M.D., published by Froben Press, 4 St. Luke's Place, New York City. Price $3.00. 144 xii pages; 12 plates with 143 illustrations. Bound in cloth.

This latest book of Dr. Herman Goodman, noted dermatologist and syphilologist, highlights the men who have contributed to the knowledge of syphilis. It also offers a valuable chronological study of the march of medicine. Included in the list of outstanding men are many who cannot be noted solely for their contribution to one disease. The names and capsules of information open endless possibilities for further study in all branches of science.

The book has a theme, a rare thing for this type of work. In the authors own words, "no one fact, no one person has stood alone. Each contributor to knowledge required the aid and assistance of those preceding him, or contemporary with him." A foreword by Dr. Victor Robinson, Professor of Medical History at Temple University, suggests physicians, nurses and public health workers take up the torch carried by these elder runners and renew their efforts toward eradication of syphilis.

The book is small but it begins with Moses and includes over 600 men from all walks of life including those of our day. Illustrations are profuse and authentic. Some of the men are so obscure that gathering vital information about them presented great difficulties. Other have full length biographies available in medical libraries.

An index contains the names with dates of birth and death. No attempt has been made to place one man above the other. The work represents years of study and intensive research on the part of the author. It is a valuable contribution to the library of anyone interested in general medical history or in the contributors to syphilology.

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TUBERCULOSIS ABSTRACTS

(Continued from page 419)

was not arrived at until nine months had elapsed from the time when the first doctor saw the patient.

The x-ray, without doubt, is by far the most valuable aid in apprehending pulmonary disease, but a distinction is necessary between its ability to yield presumptive and absolute evidence. In 98 per cent of this series of cases the initial film revealed trouble was present. An explanation of the delay in reaching a final diagnosis may be found in the fact that in the majority of instances the primary pathological process failed to produce upon the film or the fluoroscopic screen a shadow of itself. Those abnormalities that did appear were secondary effects due to the presence of the neoplasm and were of such variability as to be susceptible of a wide range of interpretation.

In 95 per cent of the cases it was possible to establish an unequivocal diagnosis during life, bronchoscopy being the leading method of obtaining tissue, and having been employed in 103 cases. In 39 other cases surgical exploration was used. Metastases were sectioned in a few cases, aspiration was the method in another small group, while the remaining 5 per cent were diagnosed only after postmortem examination.

For a decade surgery has been available in the treatment of lung cancer. A creditable showing has been made during this pioneering period. For example, 2 out of every 5 cases surgically explored have been found to be free of extension of the cancer extrapulmonarily. The percentage of the entire group of verified cases for whom there was some hope of cure was 20 per cent. This seems an encouraging ratio when we recall that prior to 1933 there was no reason to regard the condition as anything but incurable. As a reward for our efforts, 20 patients, or 13 per cent, remain as the net salvage from the entire series of 156 verified cases of primary lung cancer, out of 32 individuals selected for an attempt at curative resection. These 20 patients are all reasonably well and devoid of evidence of metastatic disease, while five of them can be referred to as "cures" insofar as they have now passed the five-year mark.

In considering practical steps toward bringing cases of lung cancer to light during their curable stage we can learn valuable lessons from the record on tuberculosis case finding. Physicians have been taught that if tuberculosis is to be discovered during

its minimal stage it is necessary not to search for absent or insignificant symptoms and physical signs but to go immediately to the x-ray. The same can be said for the apprehension of early lung cancer.

How may the first doctor consulted set in motion this mechanism of early discovery? He may save valuable time for his patient if he remembers:

1. That cancer of the lung is now one of the most important diseases of the chest in patients within the age period from 40 to 65 years, particularly in males.

2. That many patients do seek help at a time when the lesion is still confined to the lung.

3. That symptoms and signs are either lacking or misleading in the early stages.

4. That the earliest lesions will in almost every case produce some telltale shadow on the x-ray film, and

5. Finally, that there are two methods available for clinching the diagnosis:

First, that the majority of lesions are visible bronchoscopically and accessible for biopsy, and second, that when the suspicion cannot be verified in this way, it is possible to explore the chest safely by surgical means, settle the diagnosis and carry out curative treatment if necessary.

A Common Masquerading Lung Disease, Richard H. Overholt, M. D., Diseases of the Chest, May-June, 1943.

NAMED DIPLOMATES AT CHICAGO MEET

Dr. Verne L. Lance, of Charleston, and Dr. Nime K. Joseph, of Wheeling, are now diplomates of the American Board of Otolaryngology, having successfully passed the examination at the October meeting in Chicago.

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